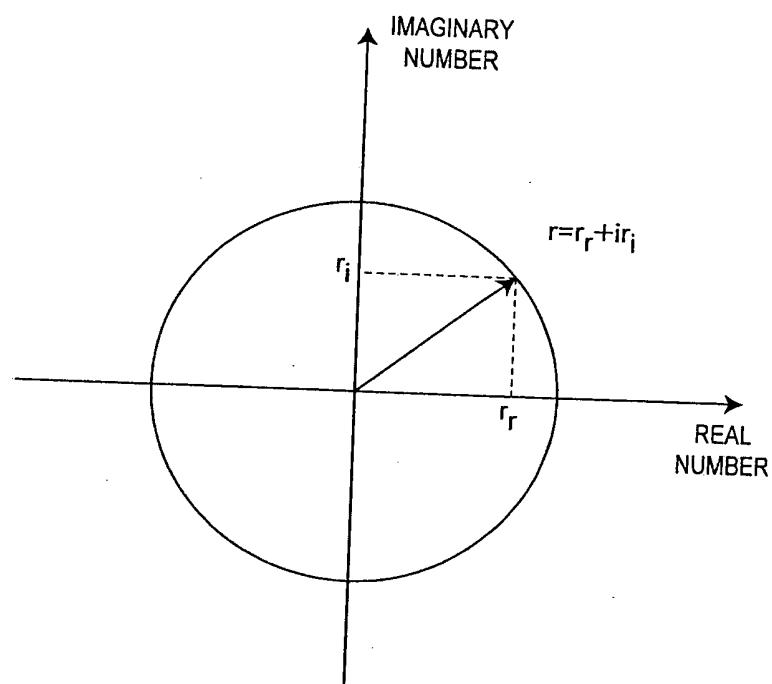


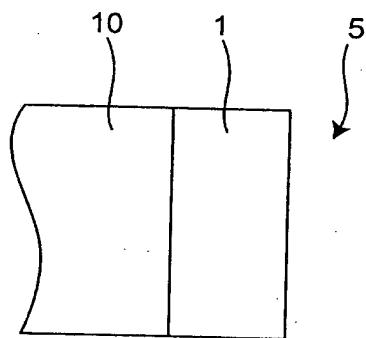
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 1



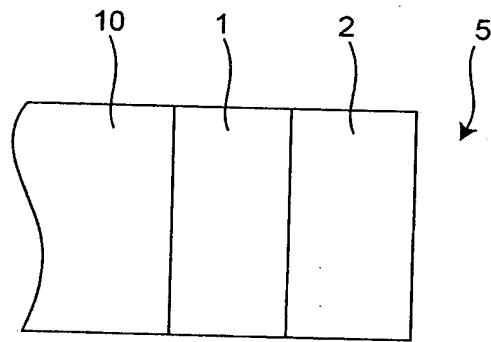
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
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Fig. 2



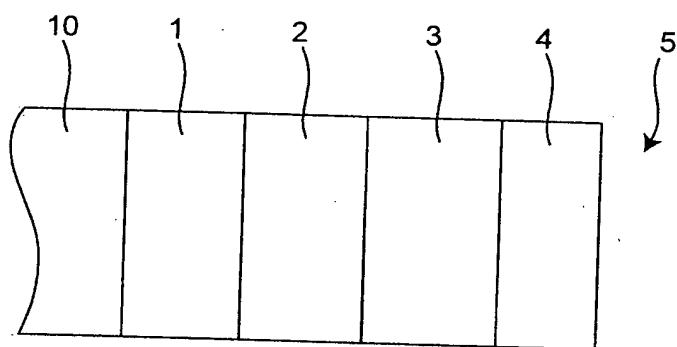
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
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Fig.3



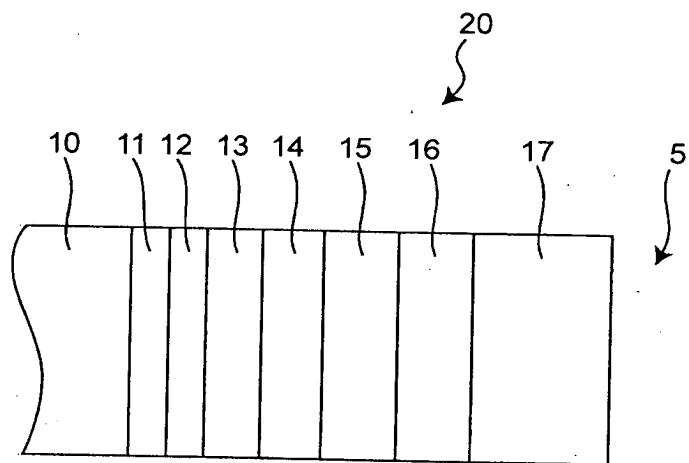
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
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Fig.4



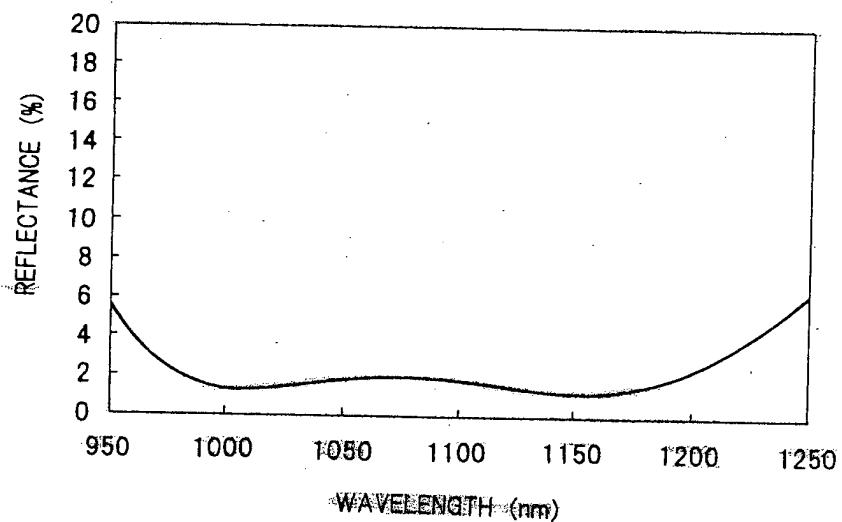
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
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Fig.5



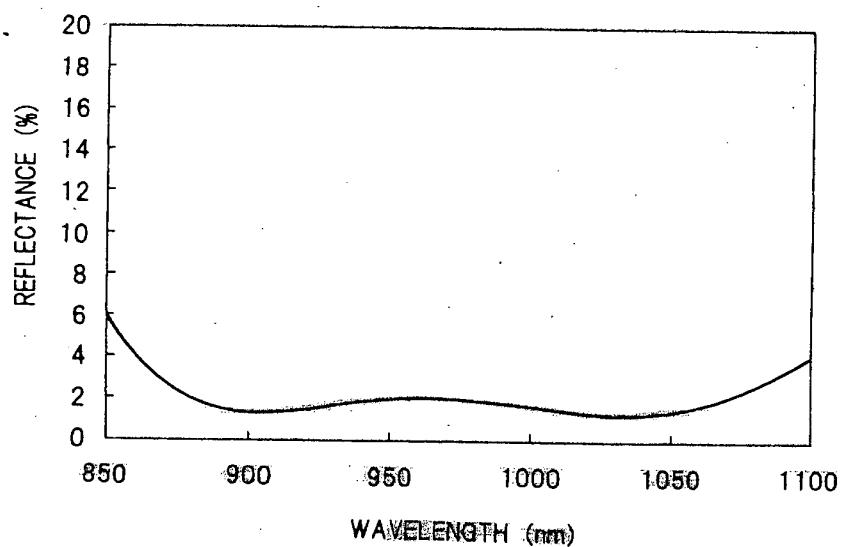
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig.6



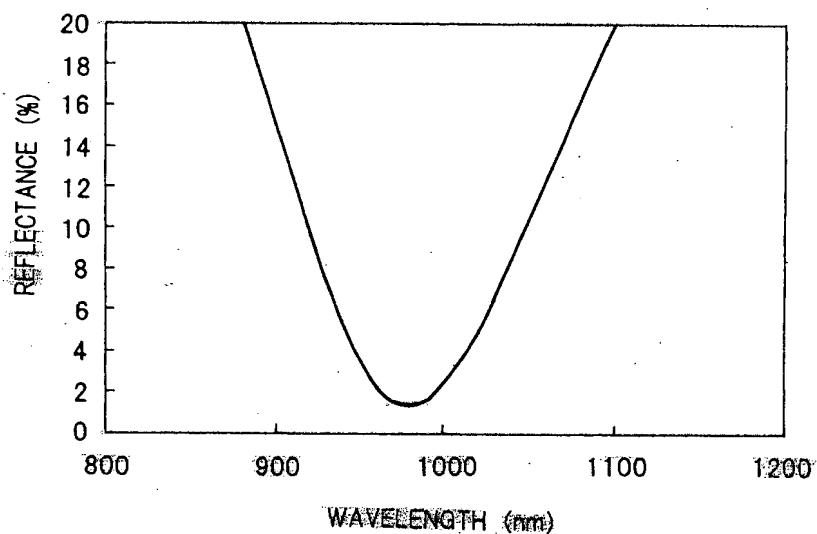
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
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Fig. 7



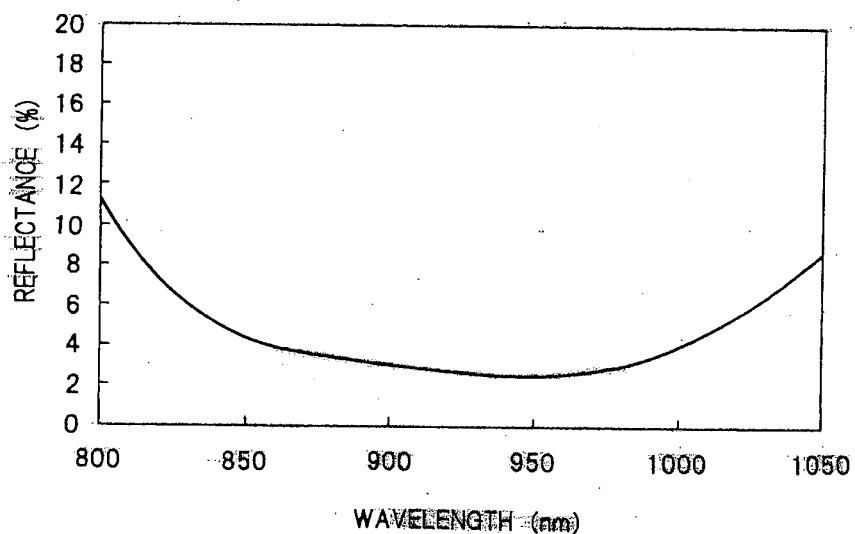
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
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Fig. 8



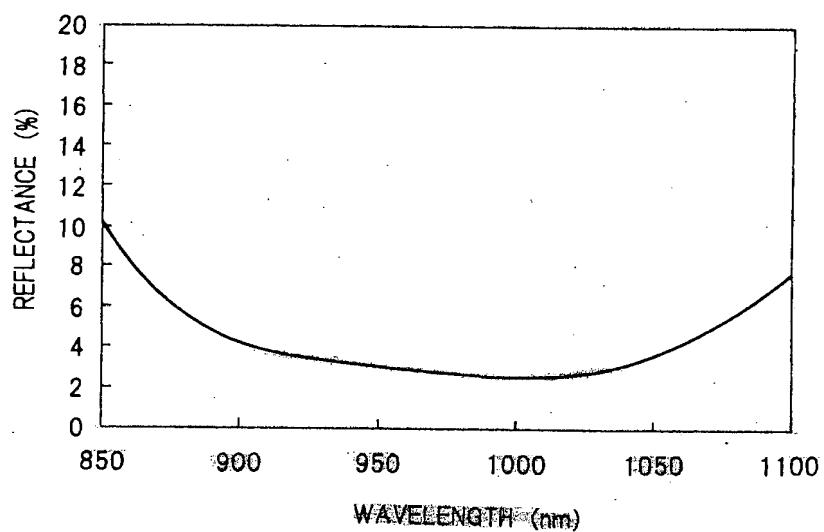
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
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Fig. 9



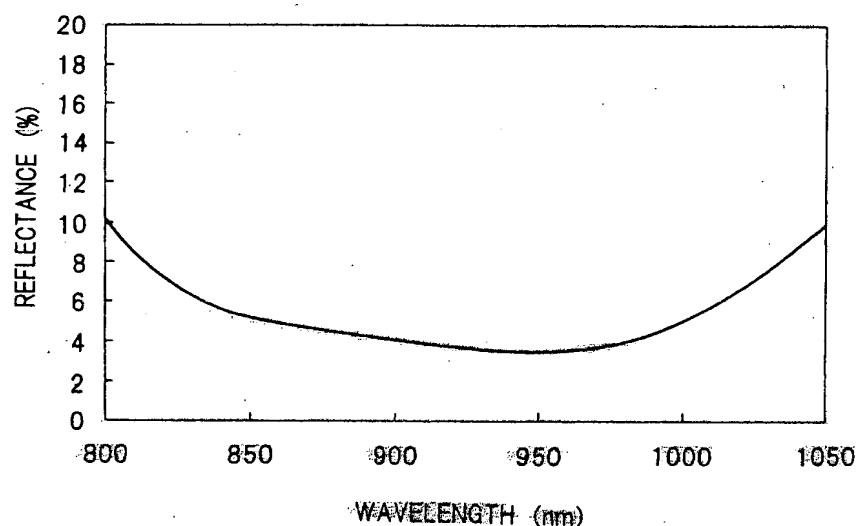
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
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Fig. 10



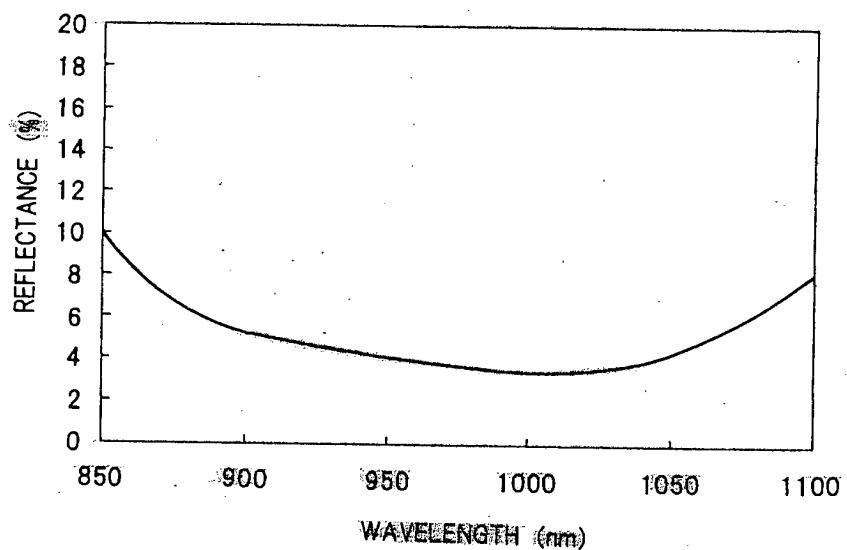
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
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Fig. 11



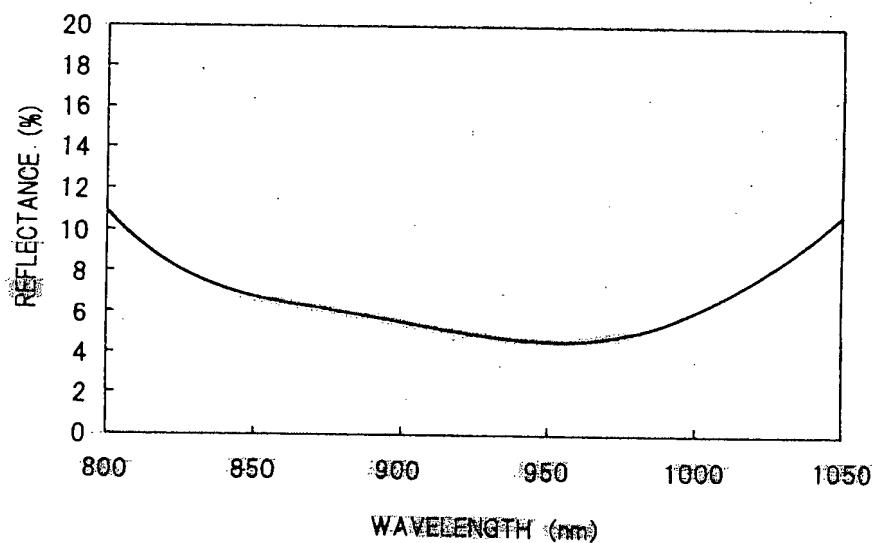
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
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Fig. 12



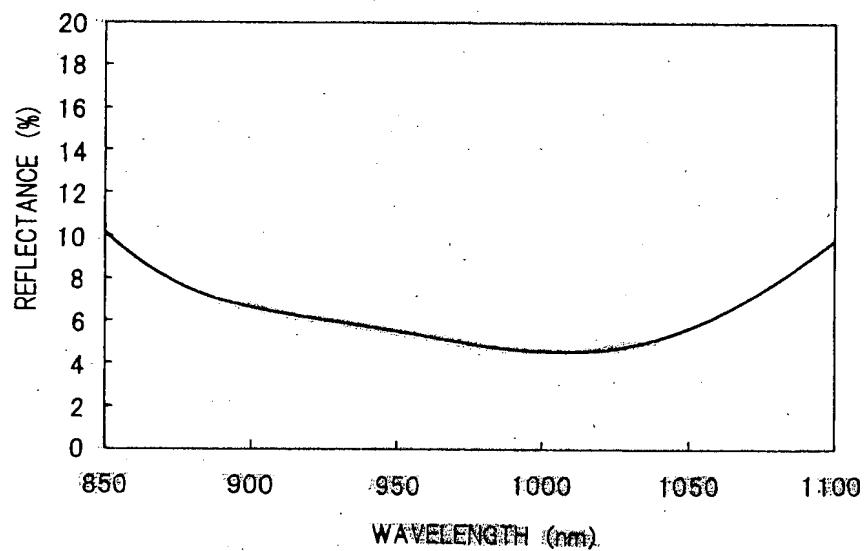
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
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Fig. 13



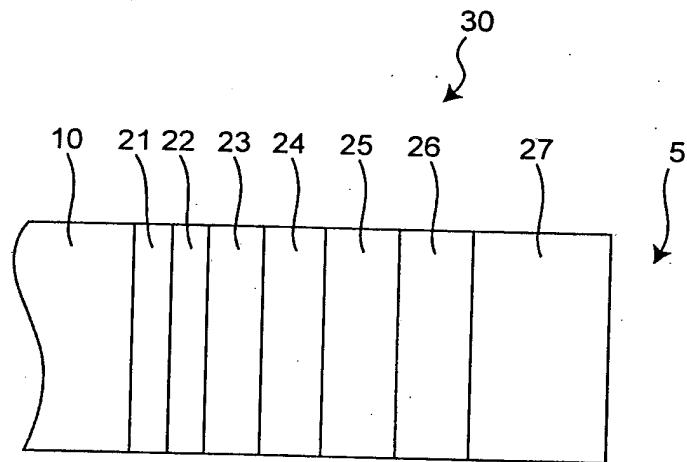
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
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Fig. 14



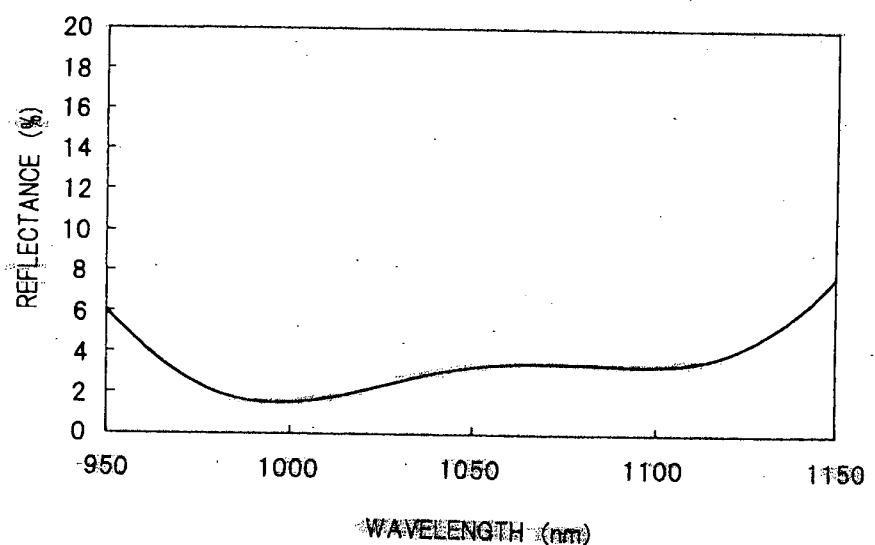
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
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Fig. 15



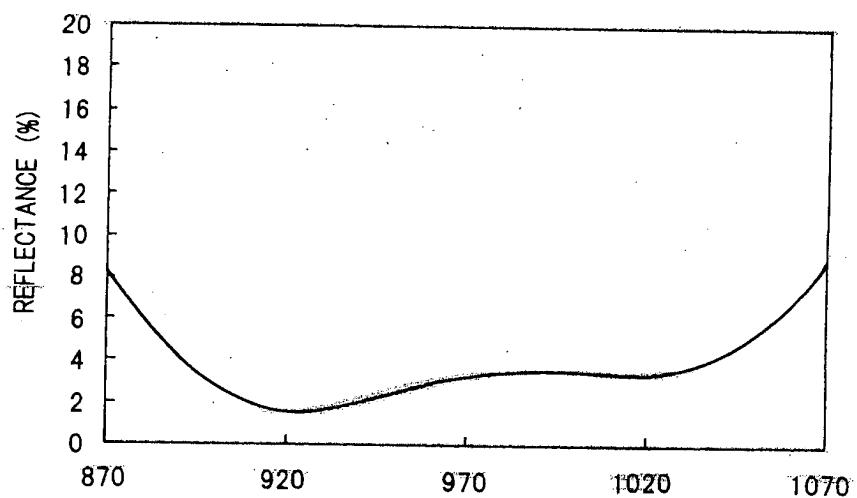
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 16



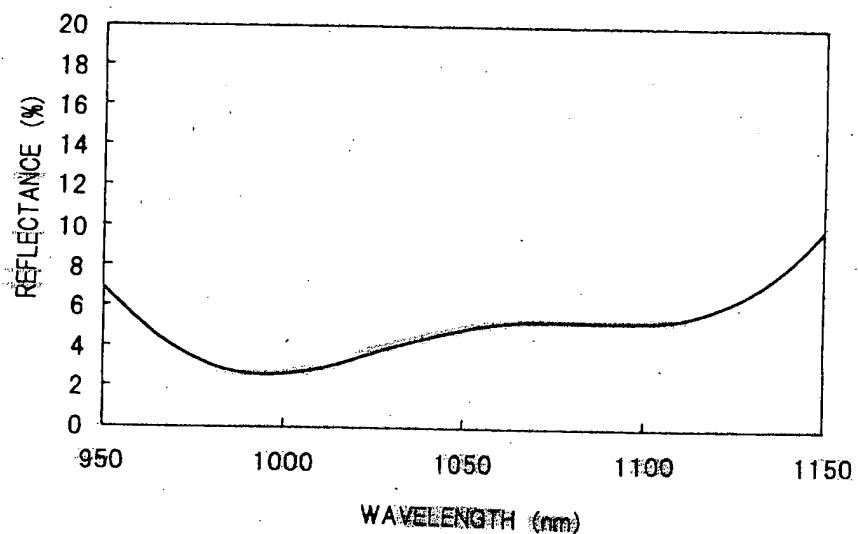
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 17



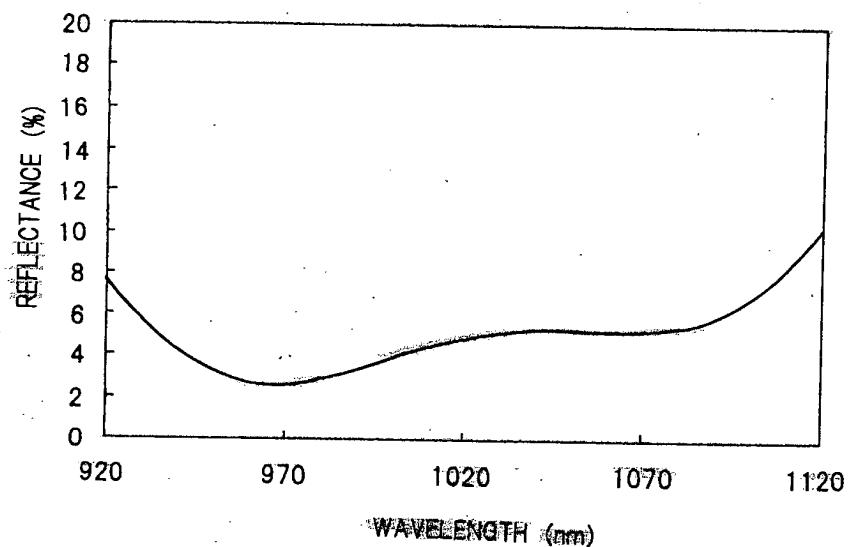
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
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Fig. 18



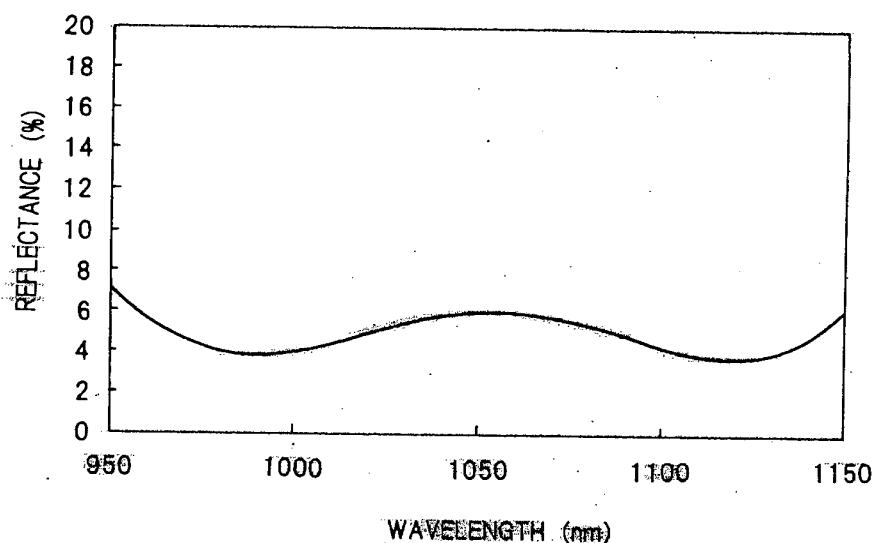
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Inventors: SHIGIHARA et al.
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Fig. 19



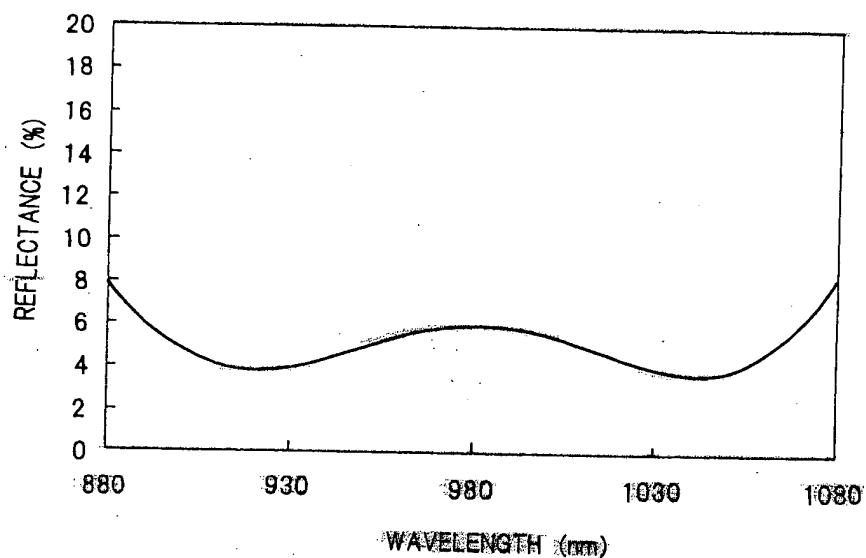
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Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
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Fig. 20



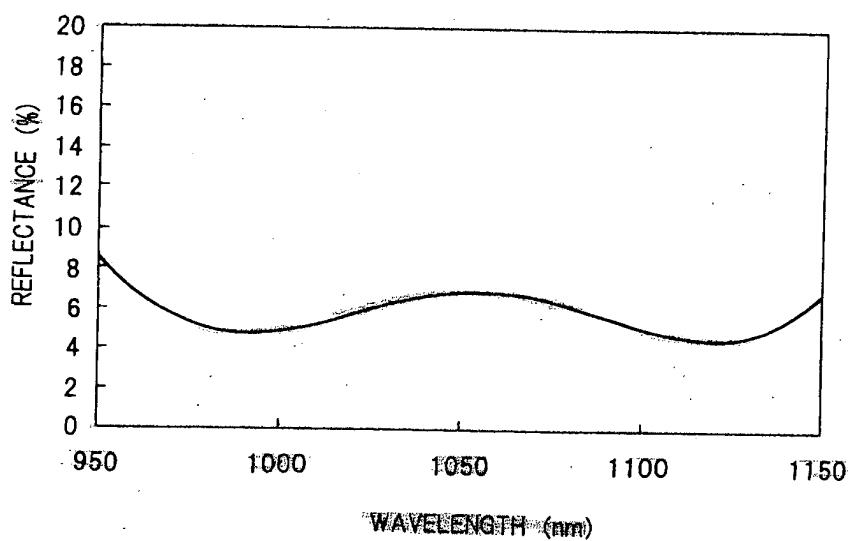
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Inventors: SHIGIHARA et al.
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Fig. 21



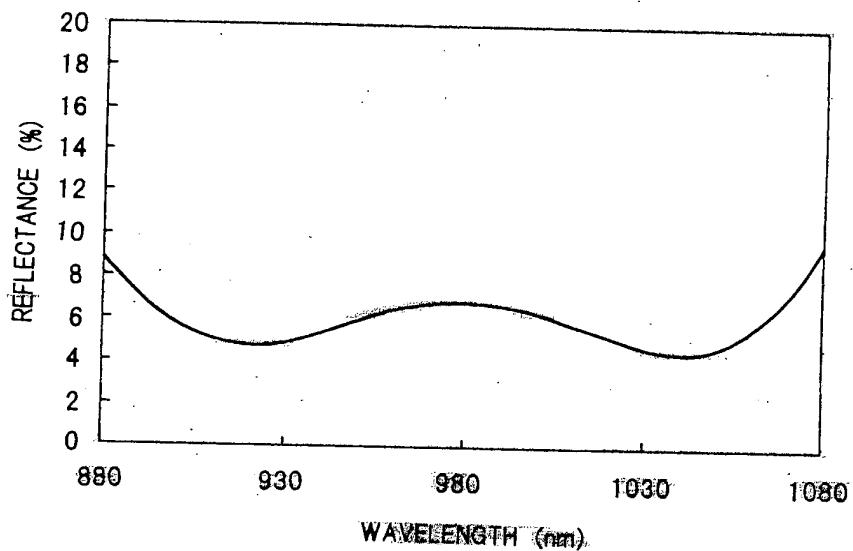
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
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Fig. 22



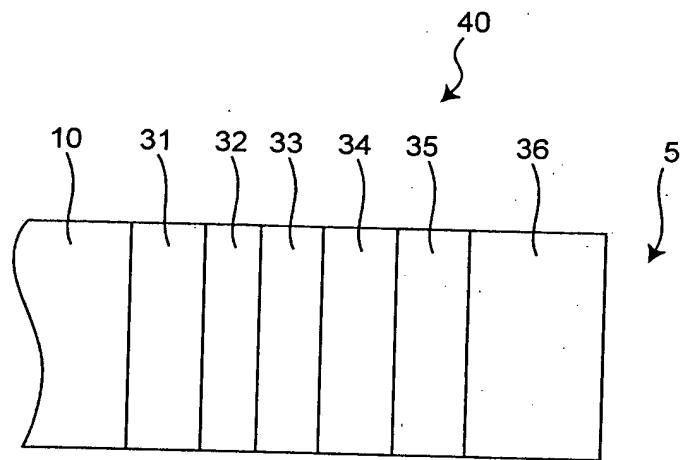
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
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Fig. 23



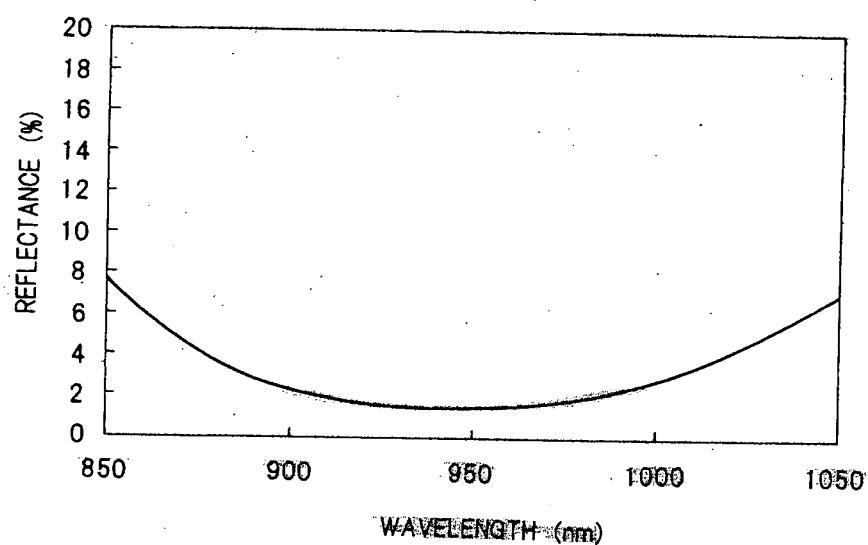
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
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Fig. 24



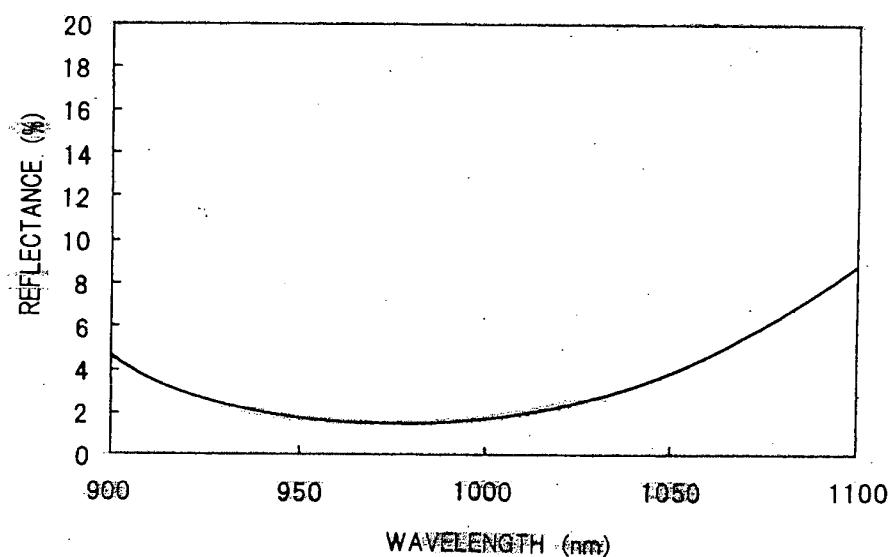
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
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Fig. 25



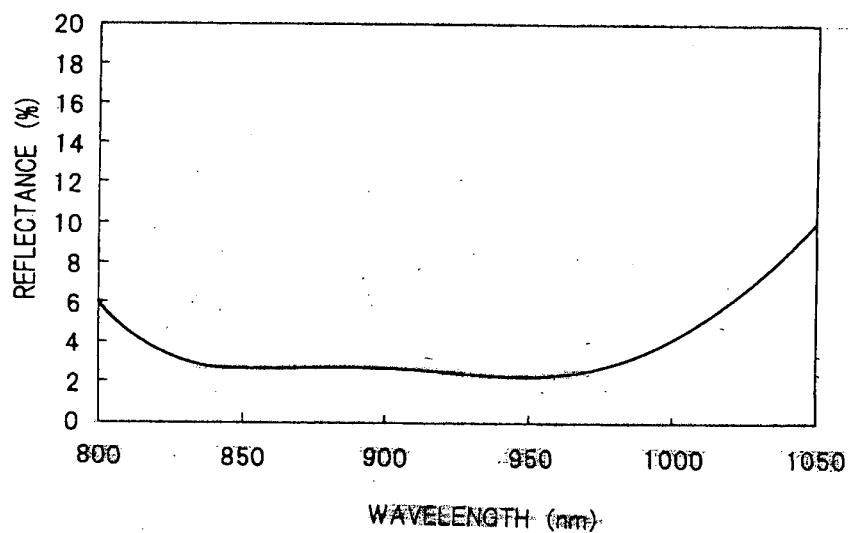
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
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Fig. 26



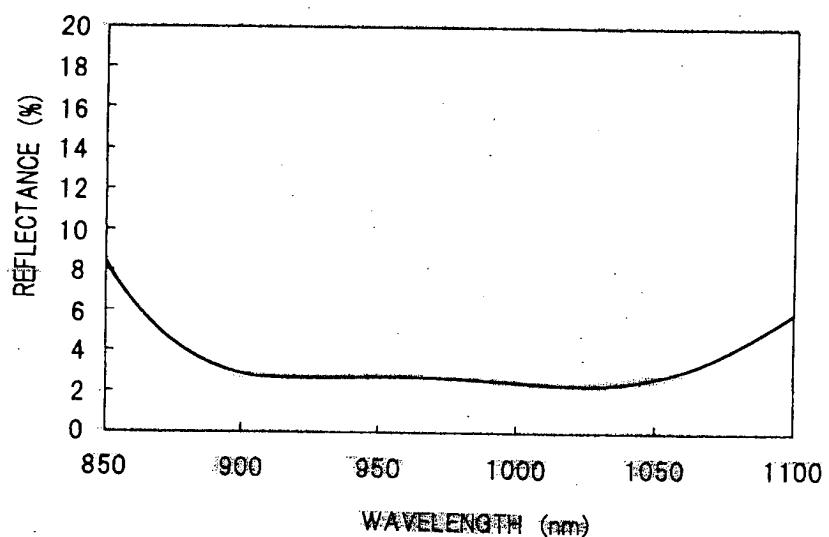
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
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Fig. 27



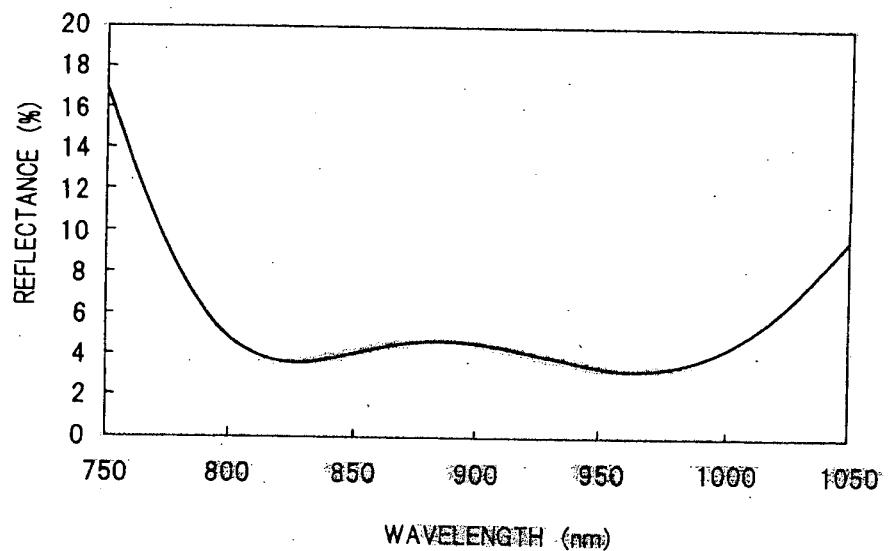
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 28



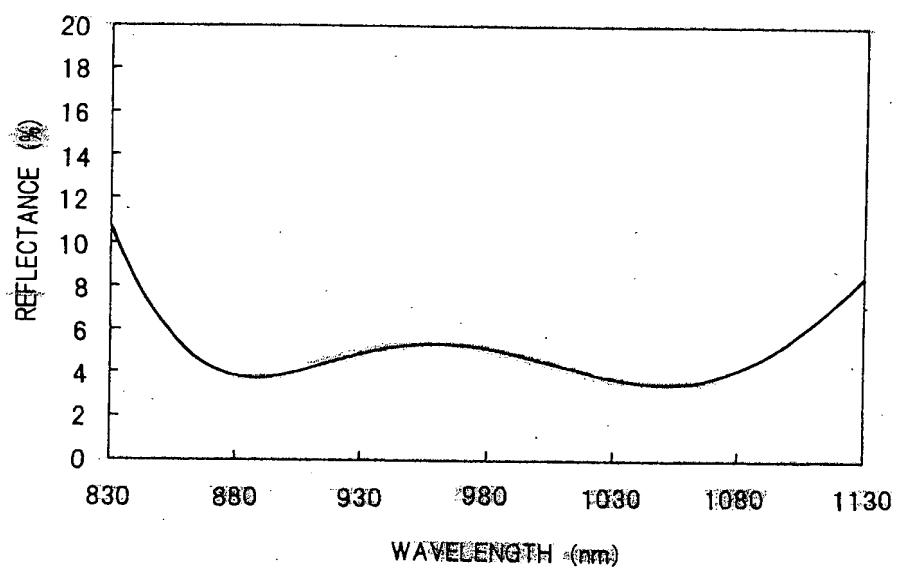
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
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Fig. 29



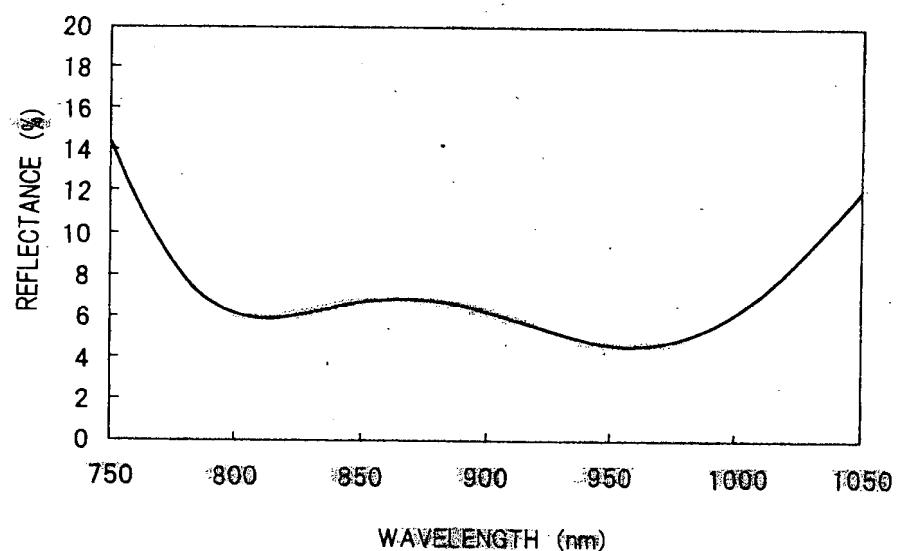
Title: SEMICONDUCTOR OPTICAL DEVICE
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Fig. 30



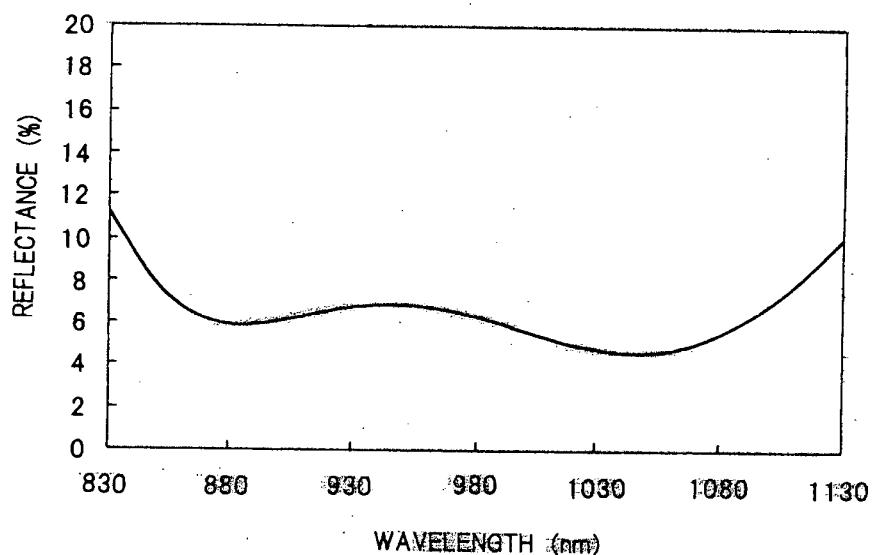
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
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Fig. 31



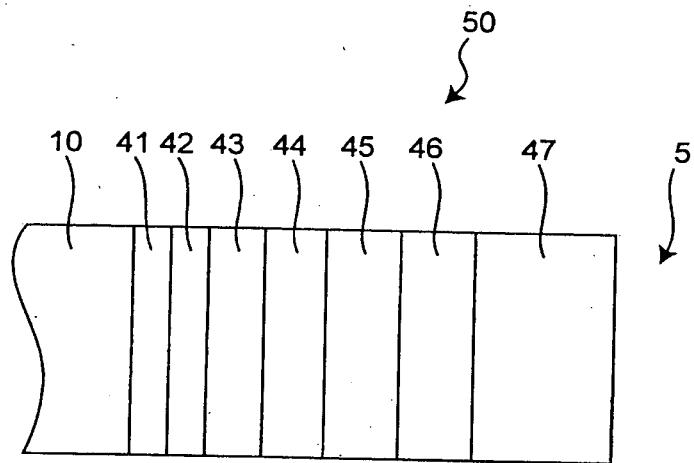
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 32



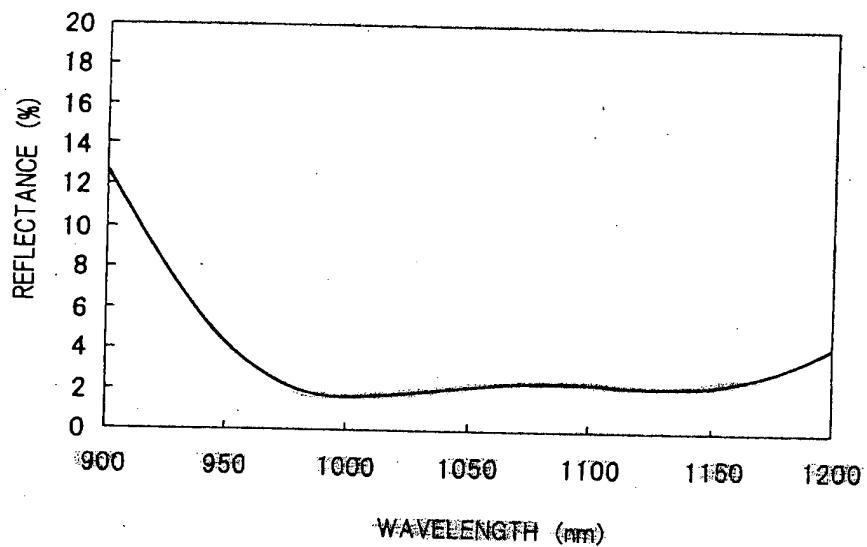
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig.33



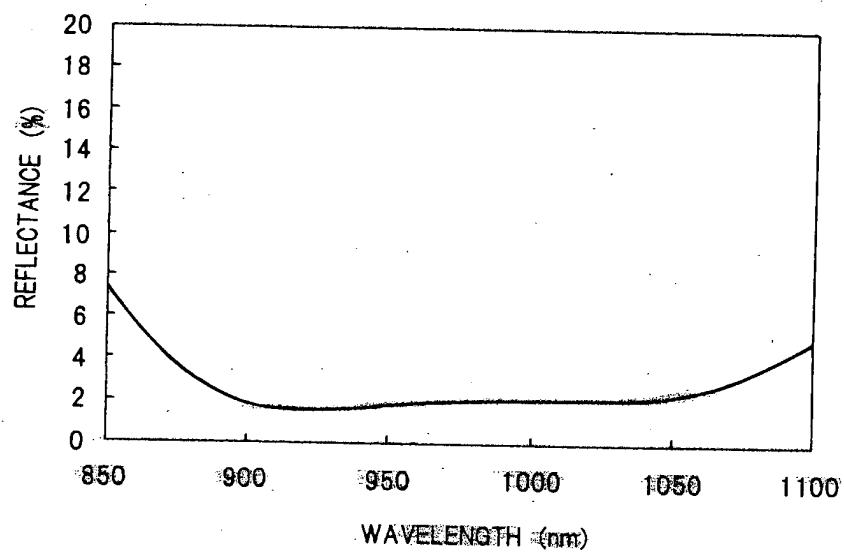
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 34



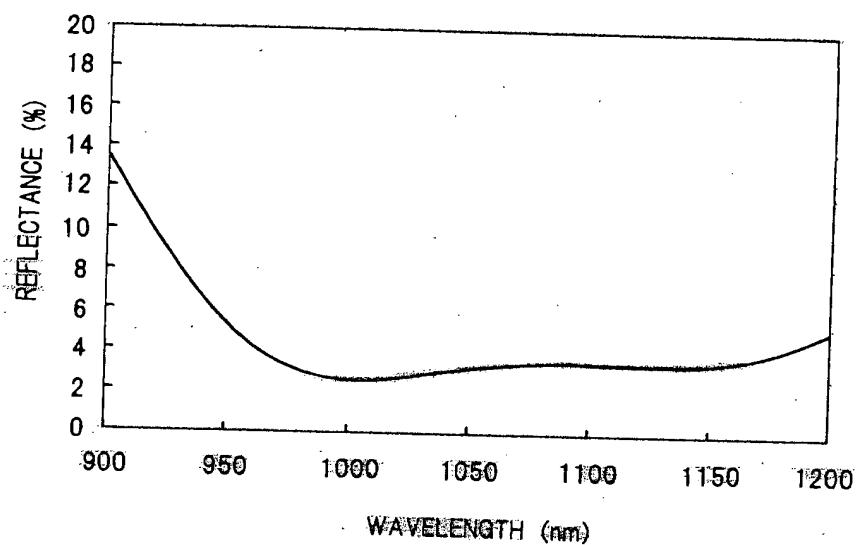
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 35



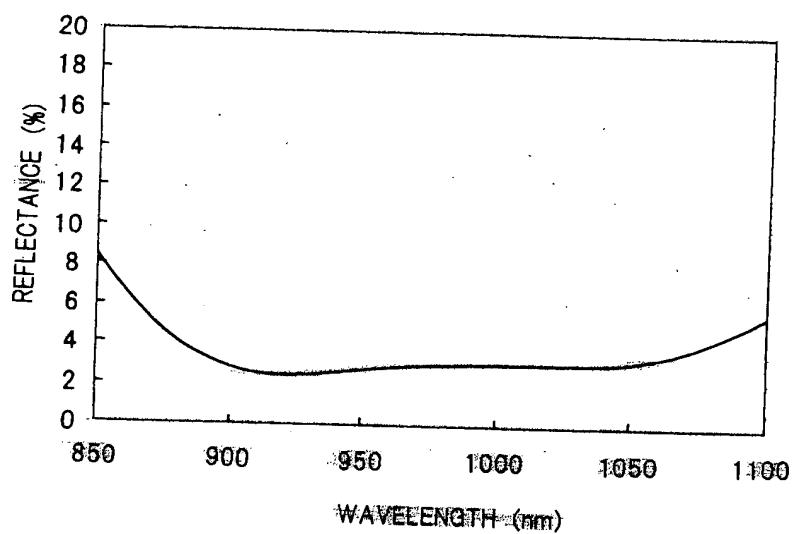
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
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Fig.36



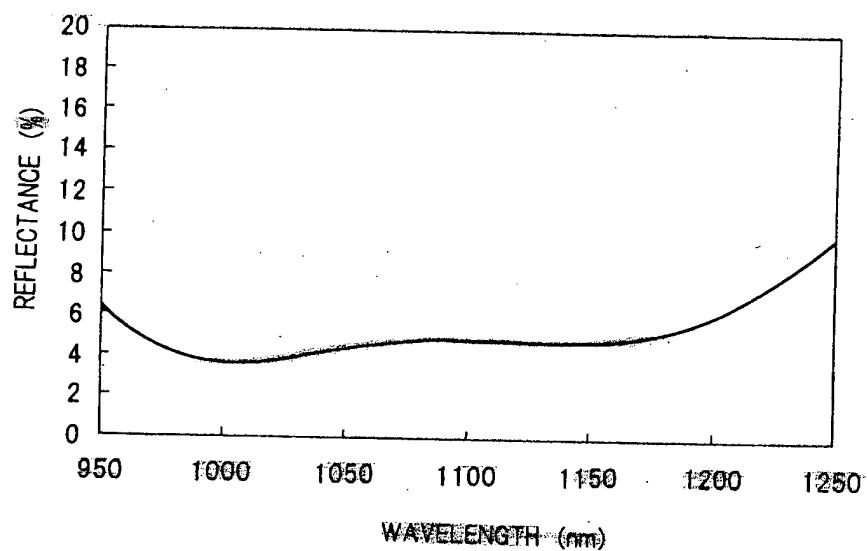
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
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Fig.37



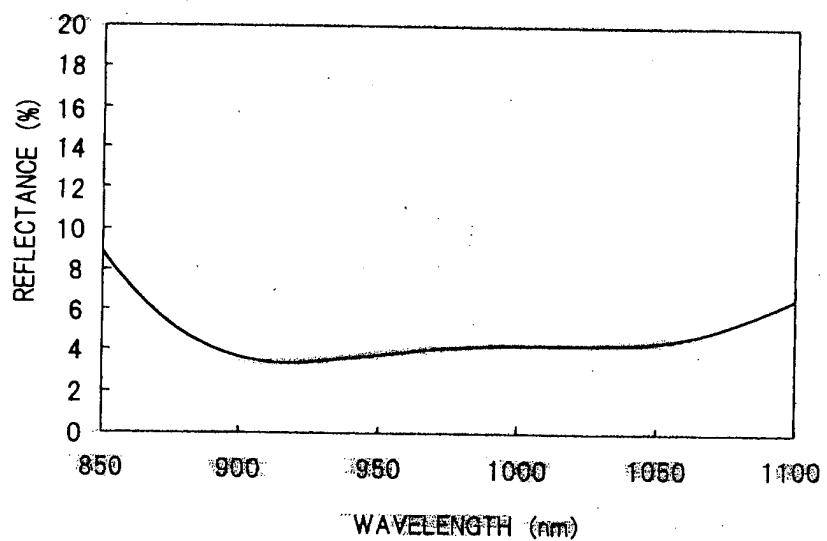
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig.38



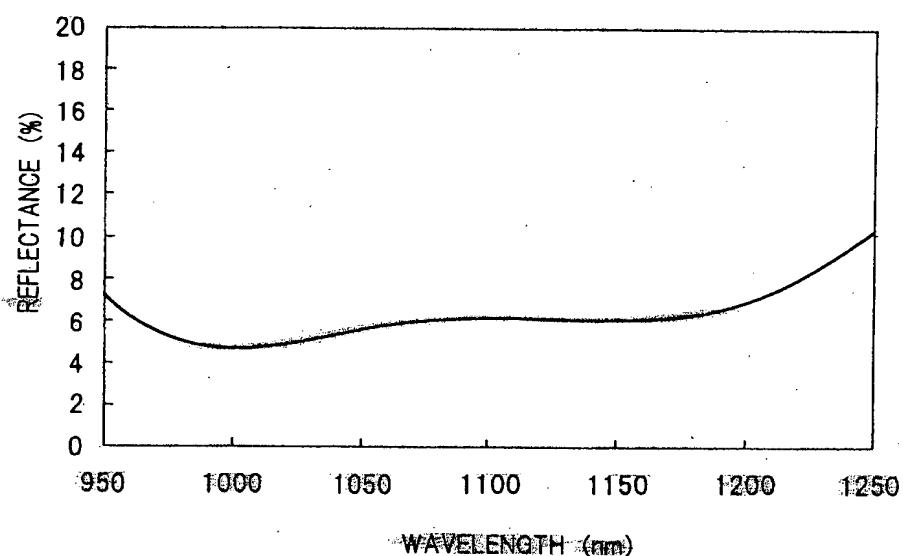
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 39



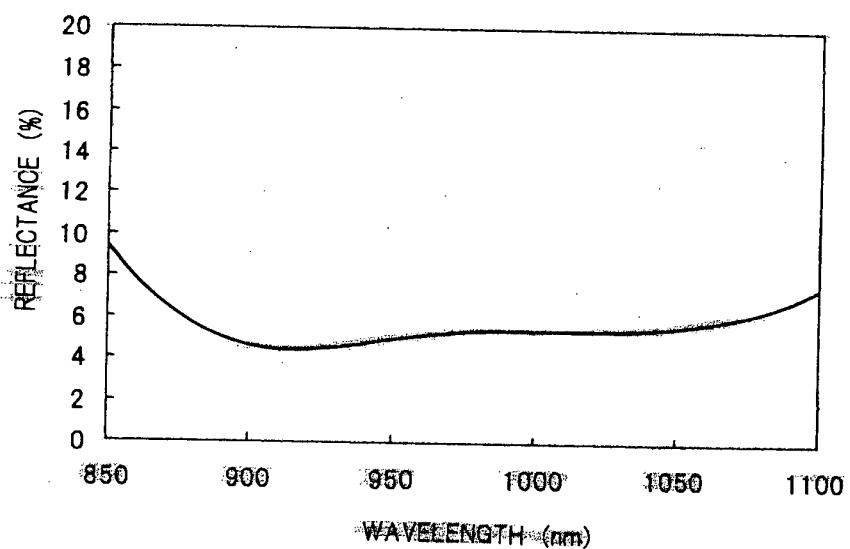
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 40



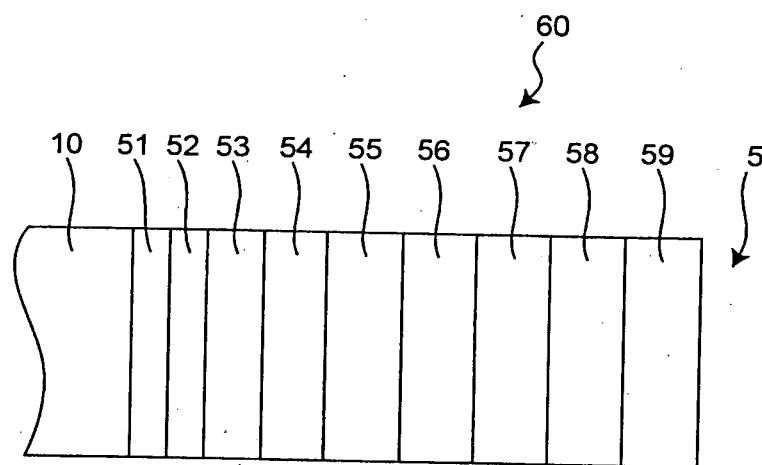
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 41



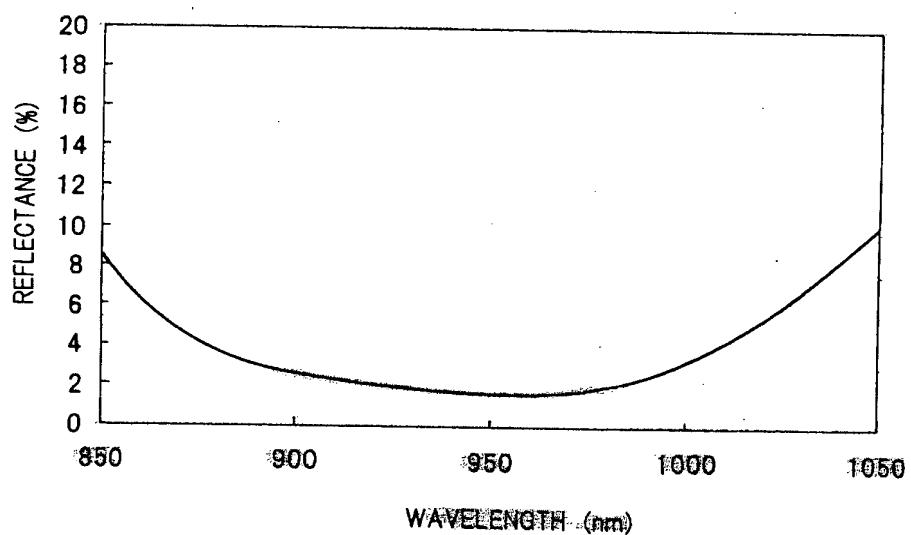
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig.42



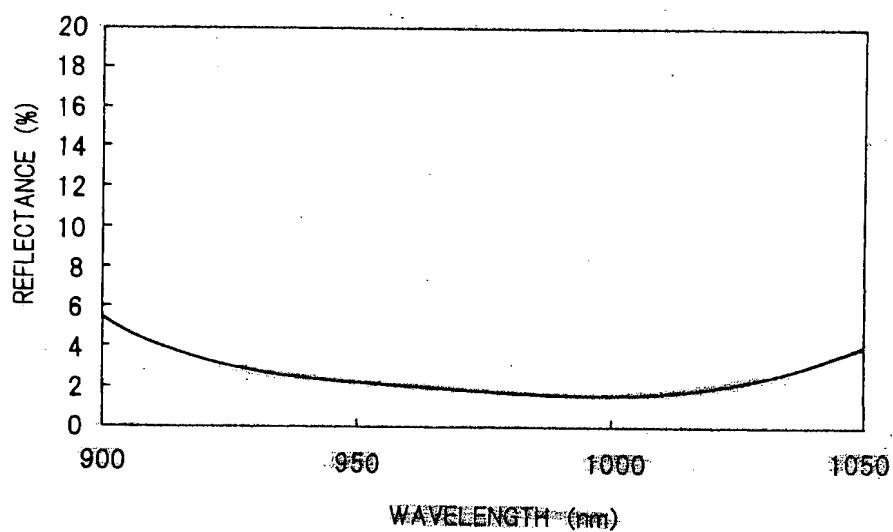
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 43



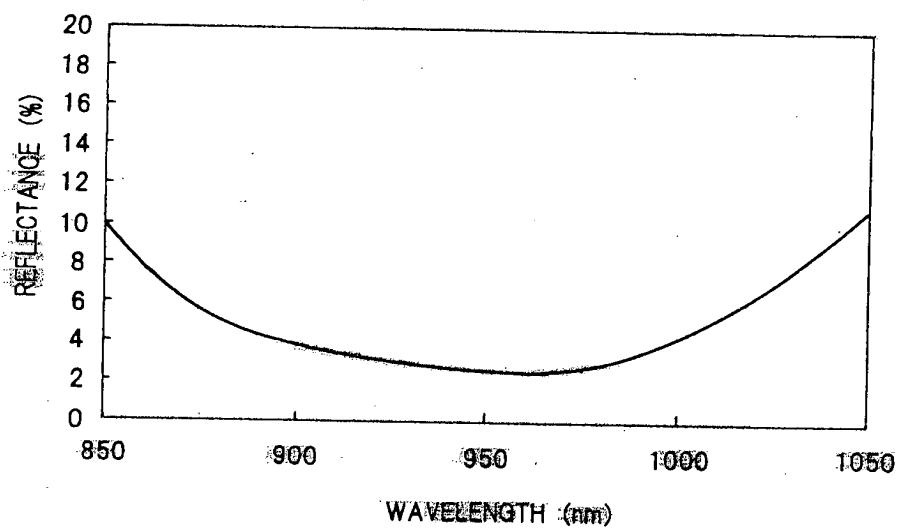
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 44



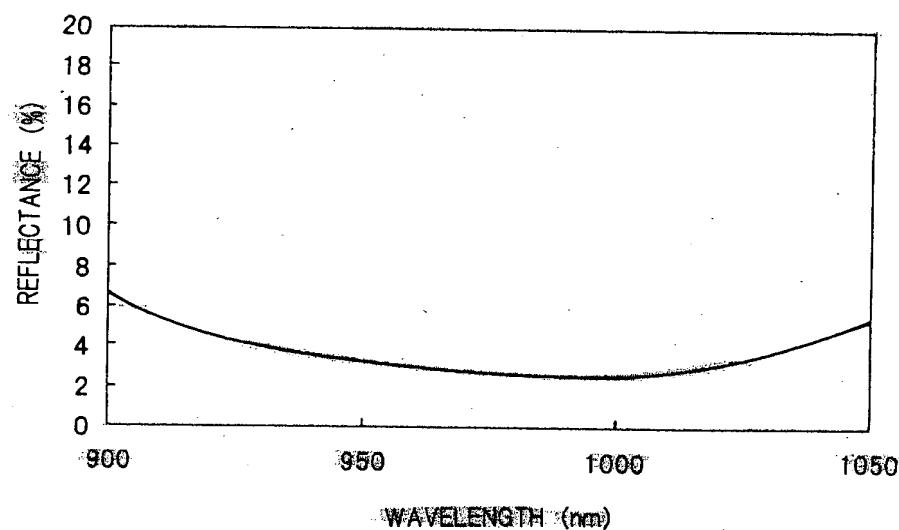
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 45



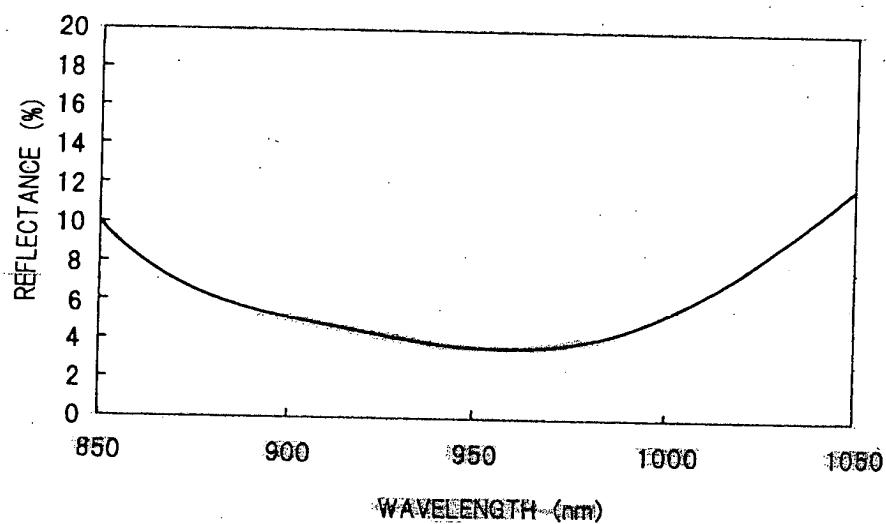
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Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig.46



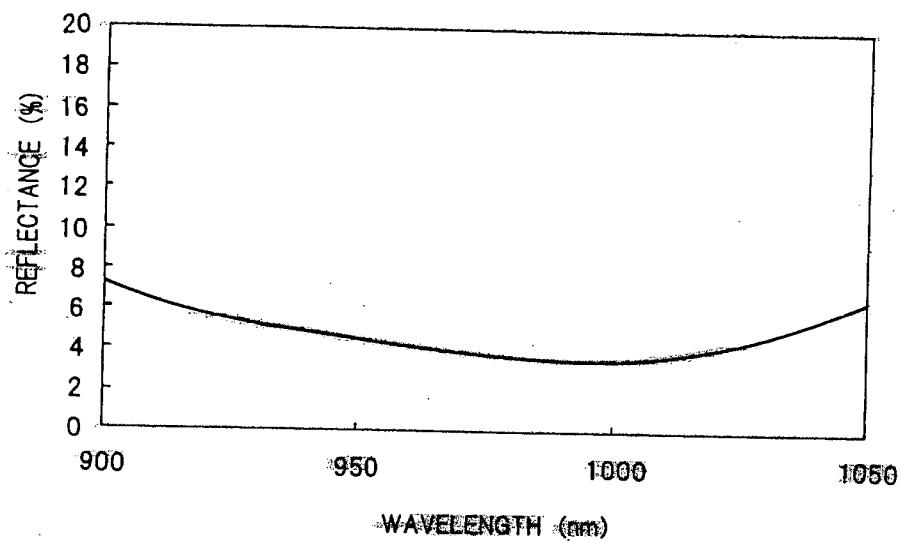
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig.47



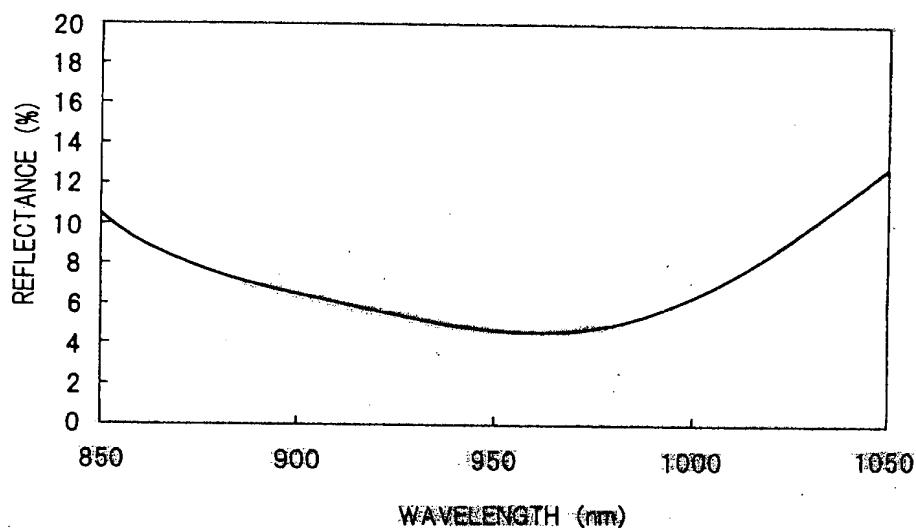
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig.48



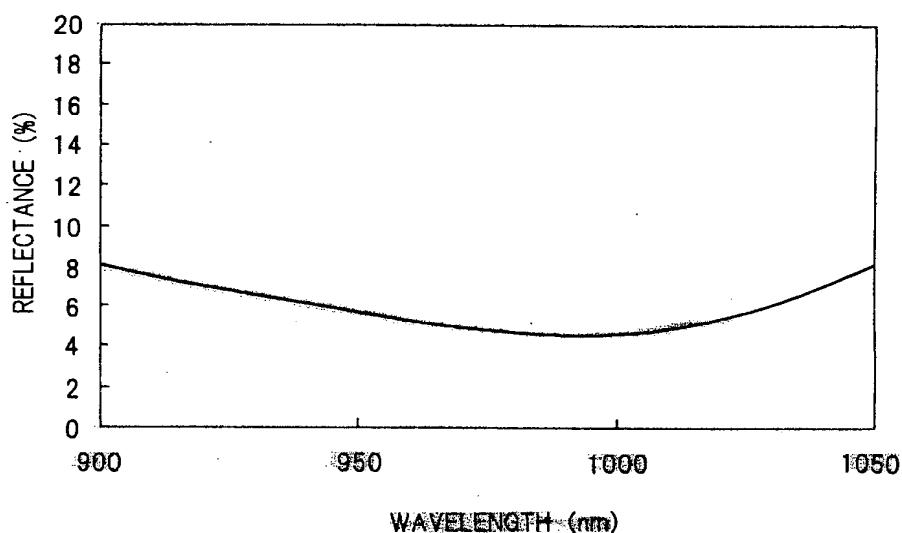
Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 49



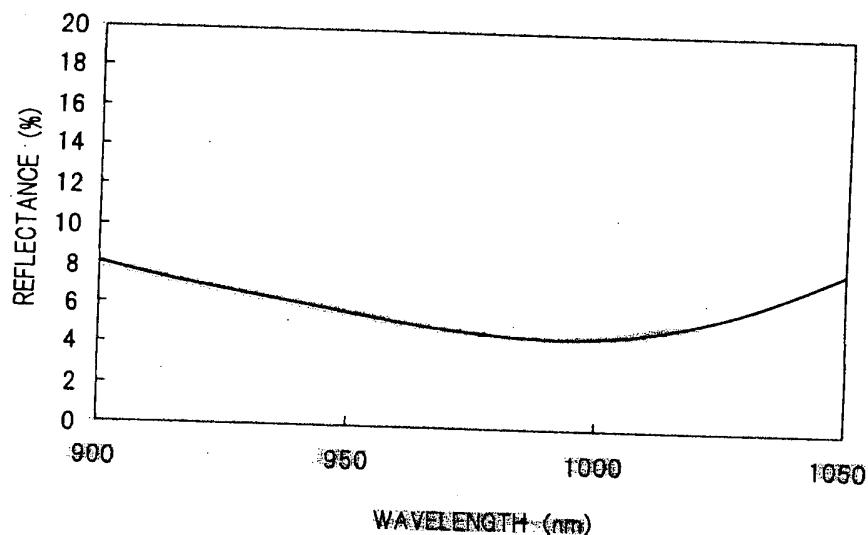
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Fig. 50



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Fig. 50



Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig.51

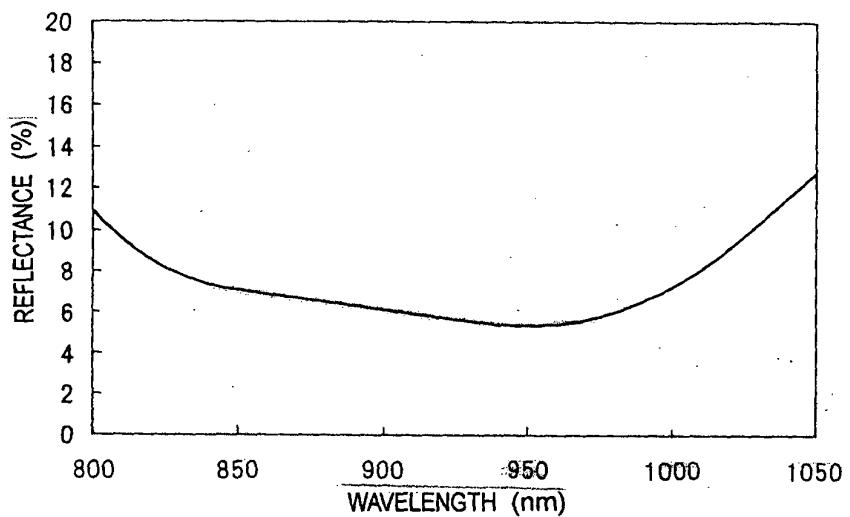
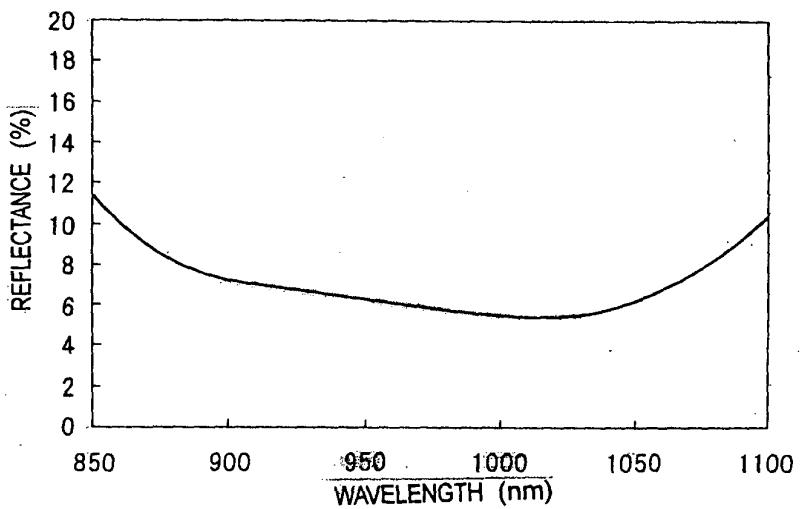


Fig.52



Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 53

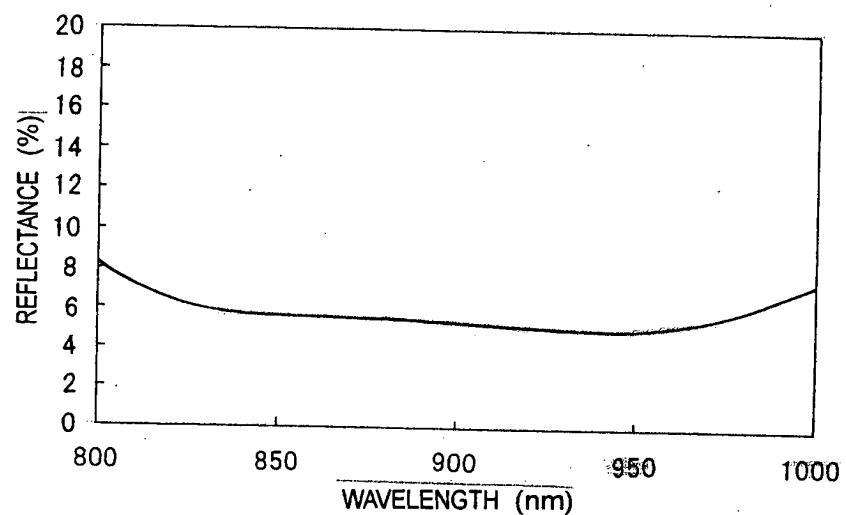
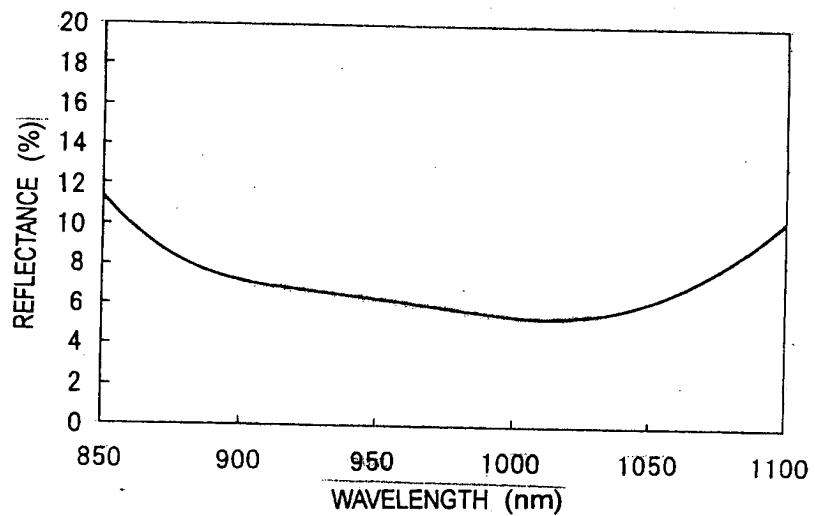


Fig. 54



Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 55

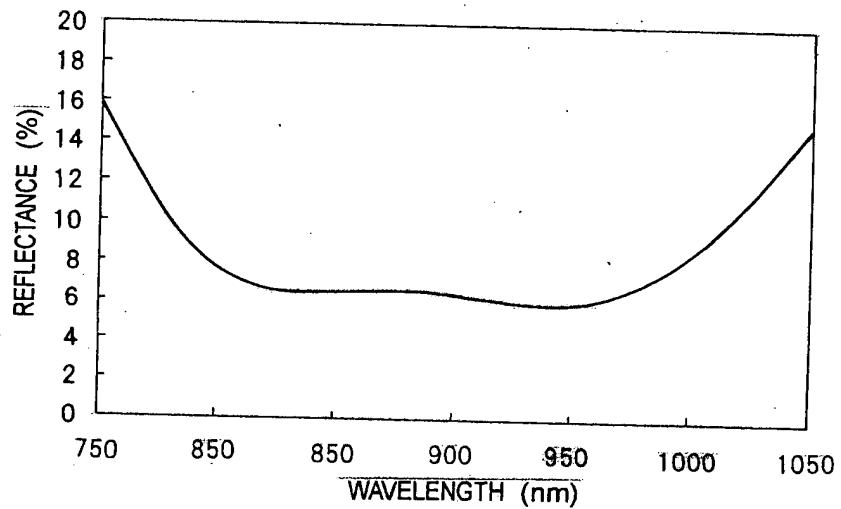
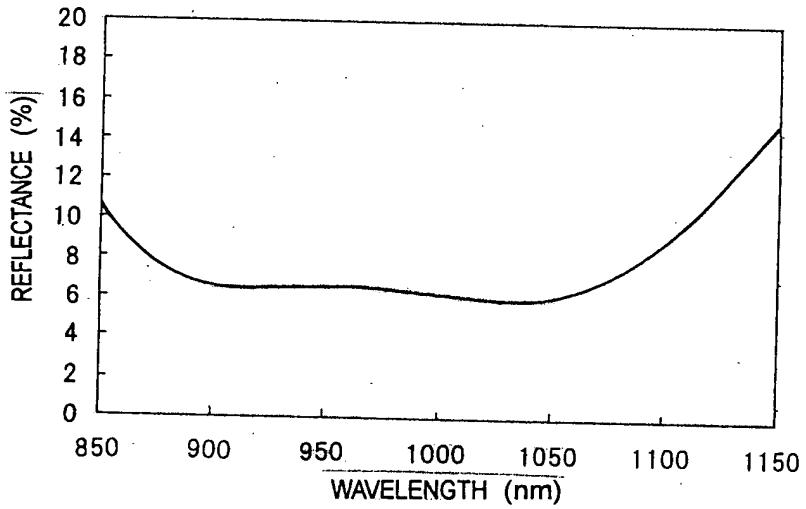


Fig. 56



Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 57

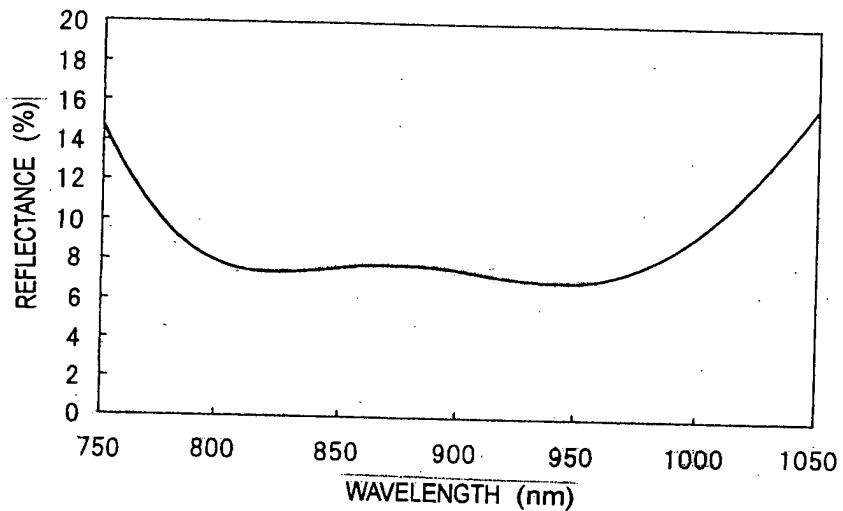


Fig. 58

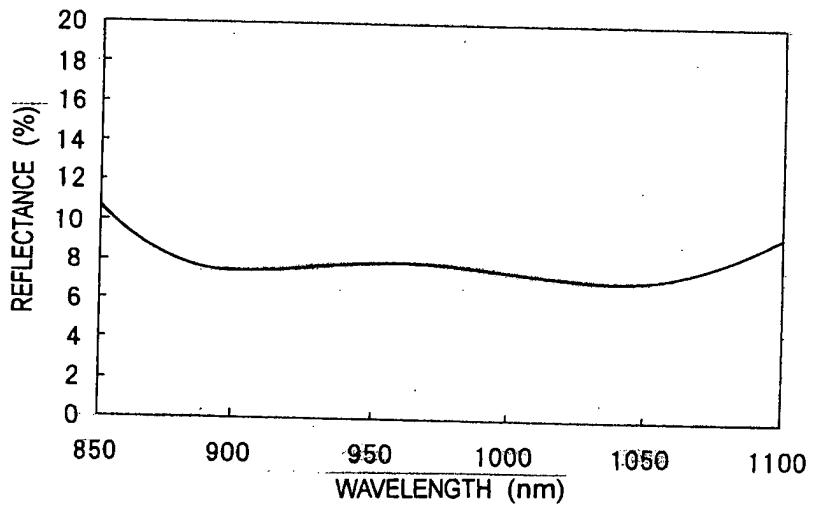


Fig. 59

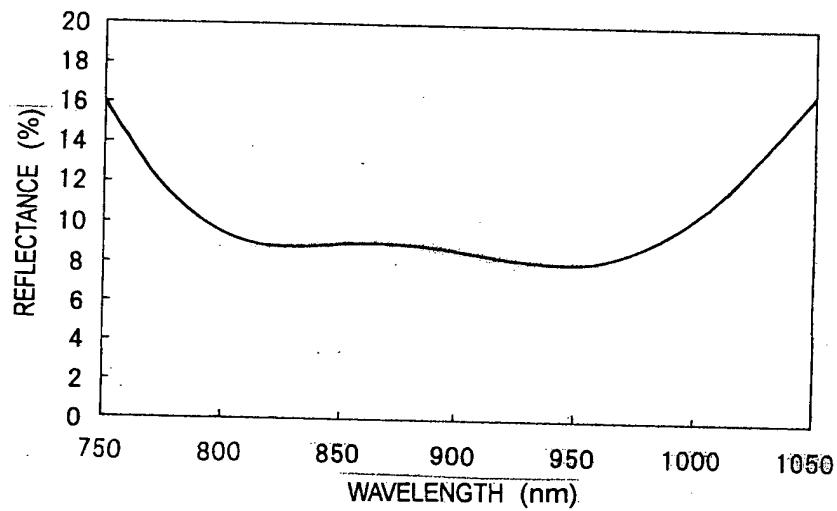
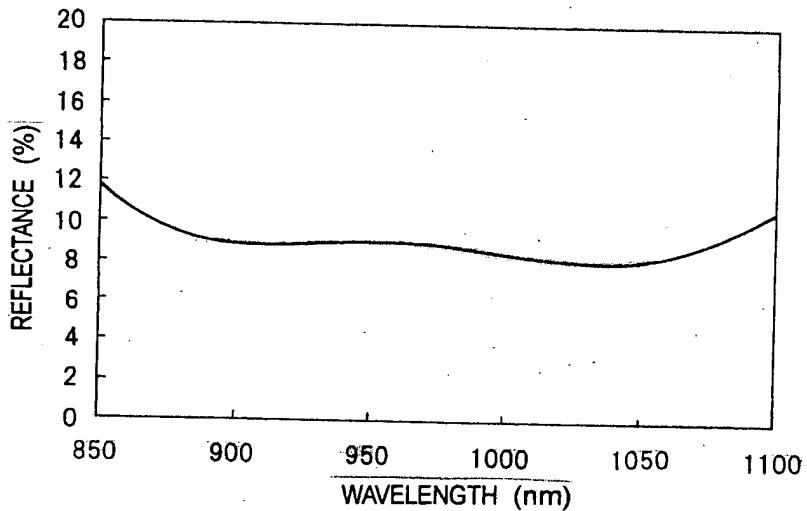


Fig. 60



Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 61

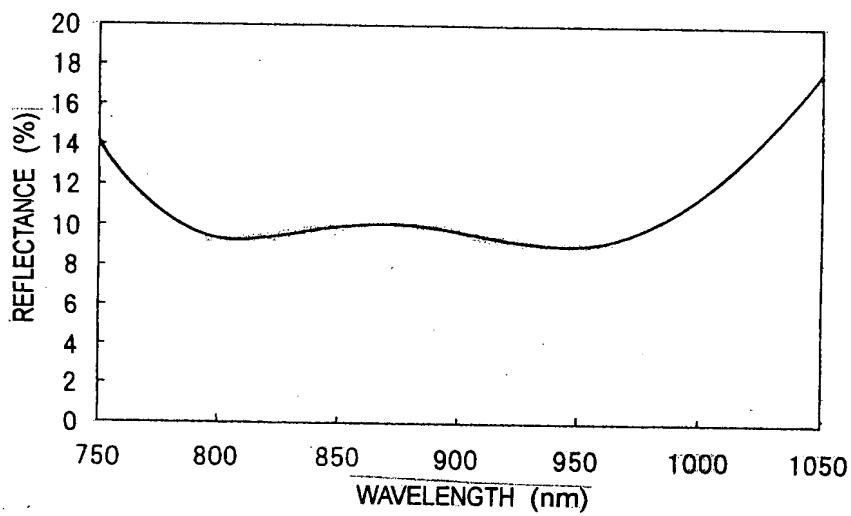
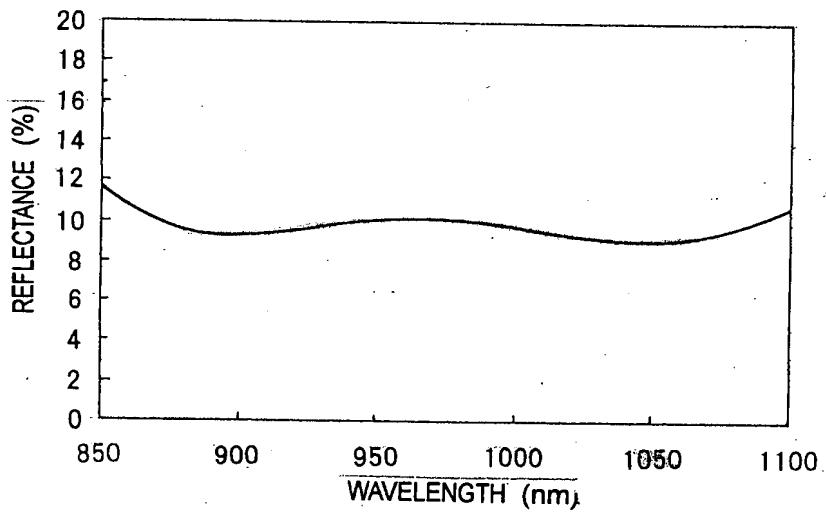


Fig. 62



Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 63

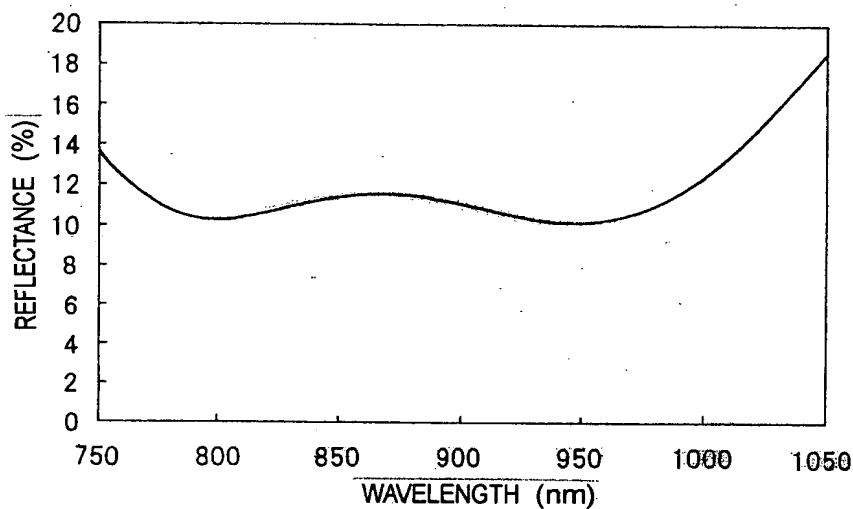
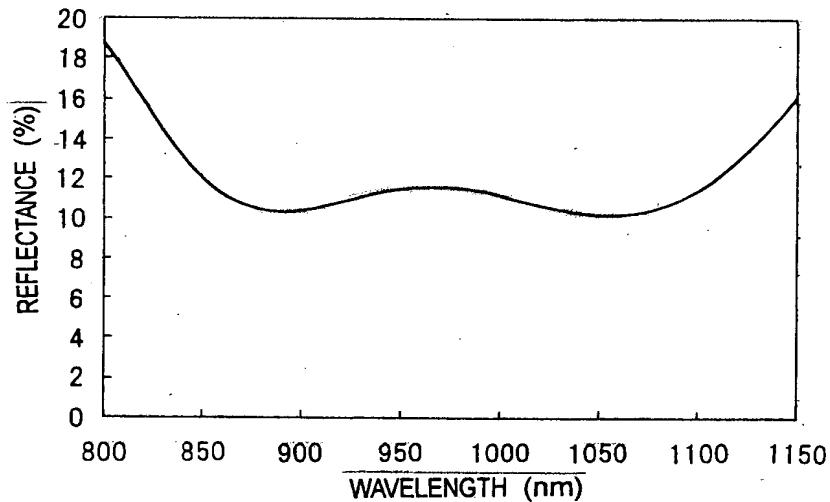


Fig. 64



Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 65

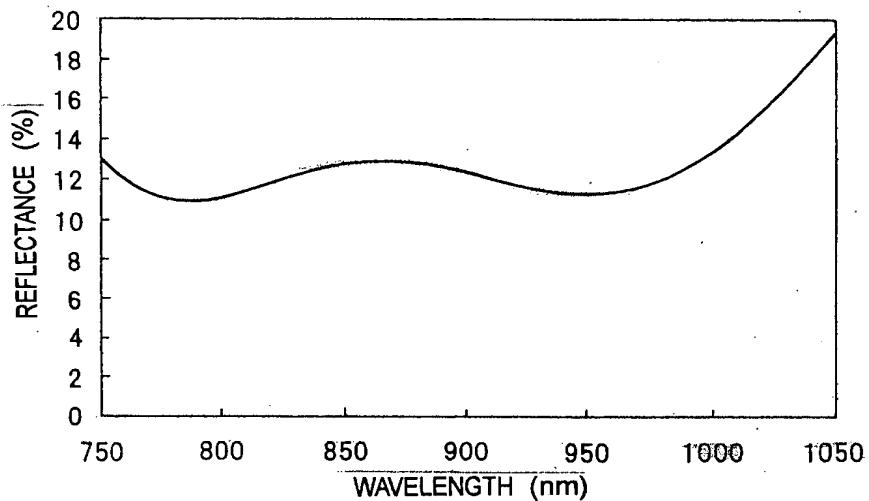
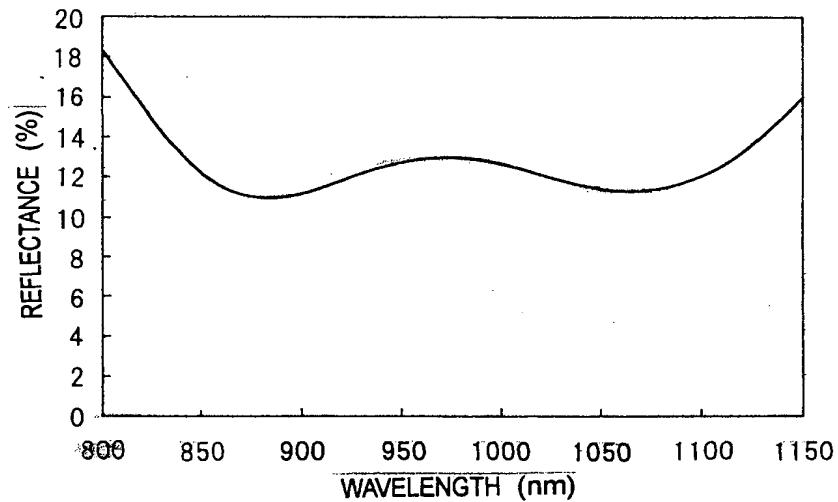


Fig. 66



Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 67

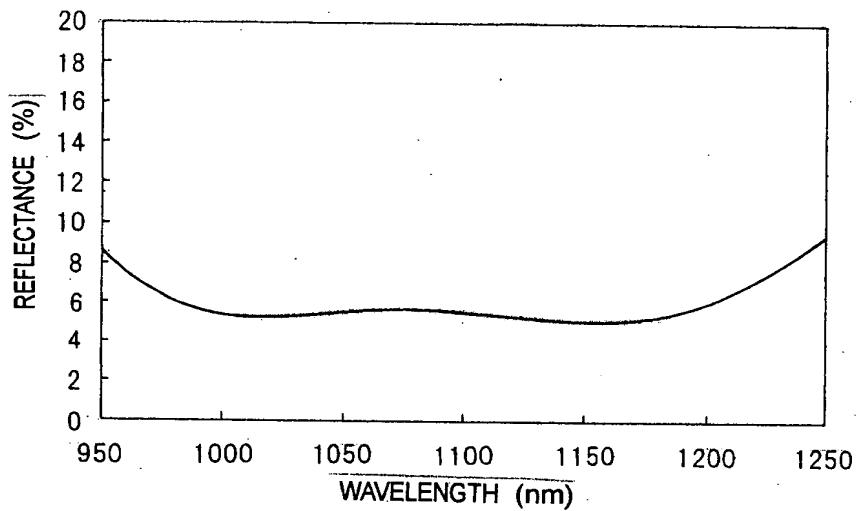
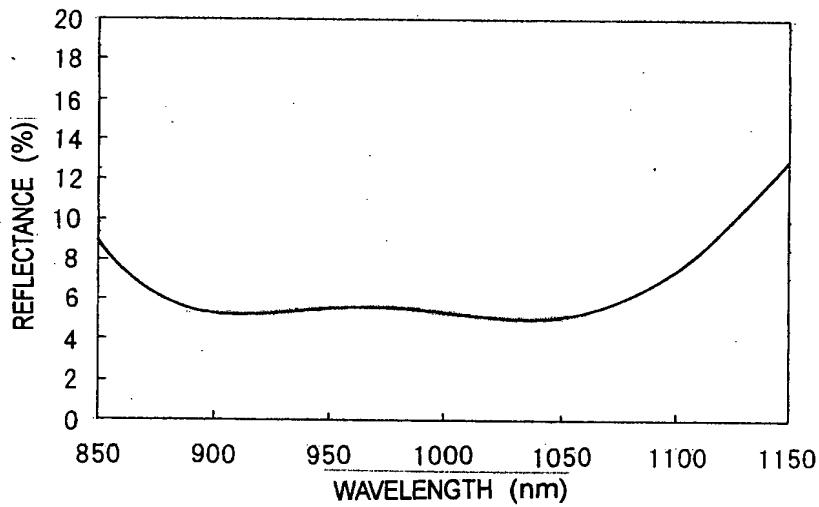


Fig. 68



Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 69

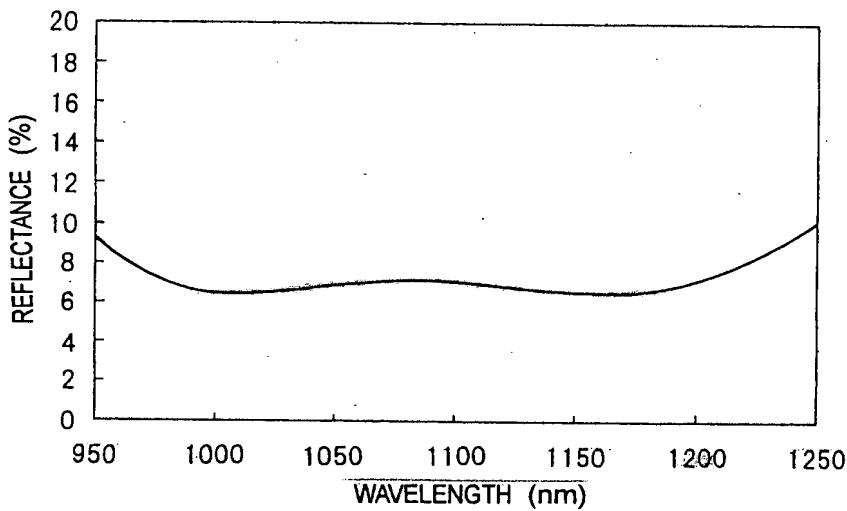
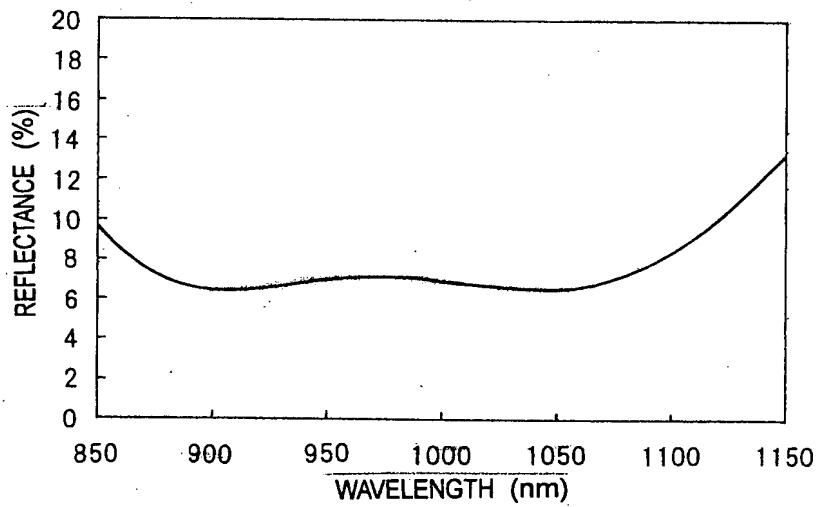


Fig. 70



Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 71

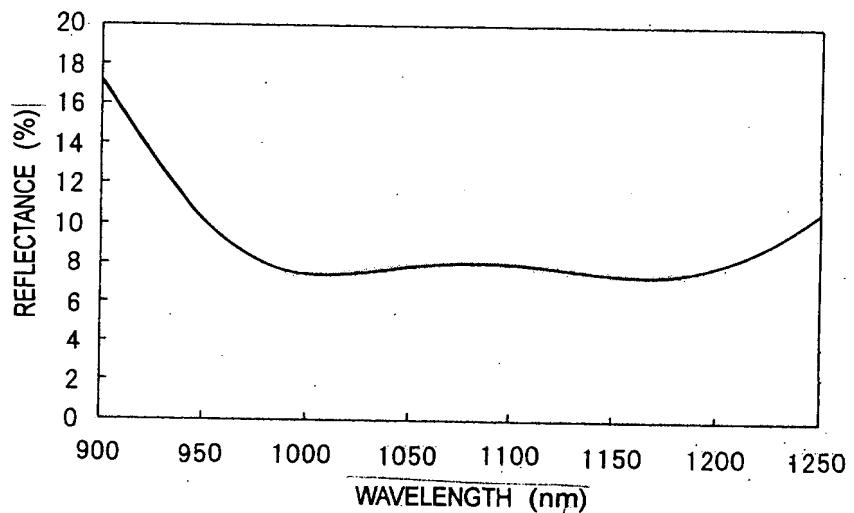
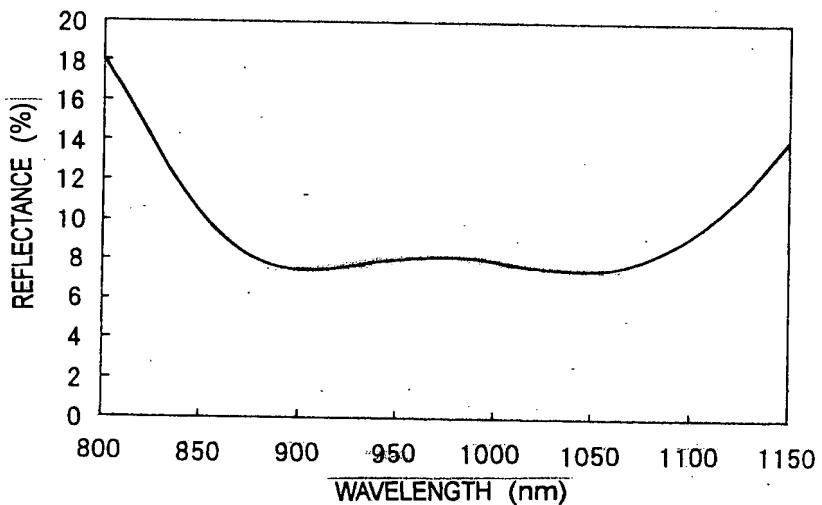


Fig. 72



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Fig. 73

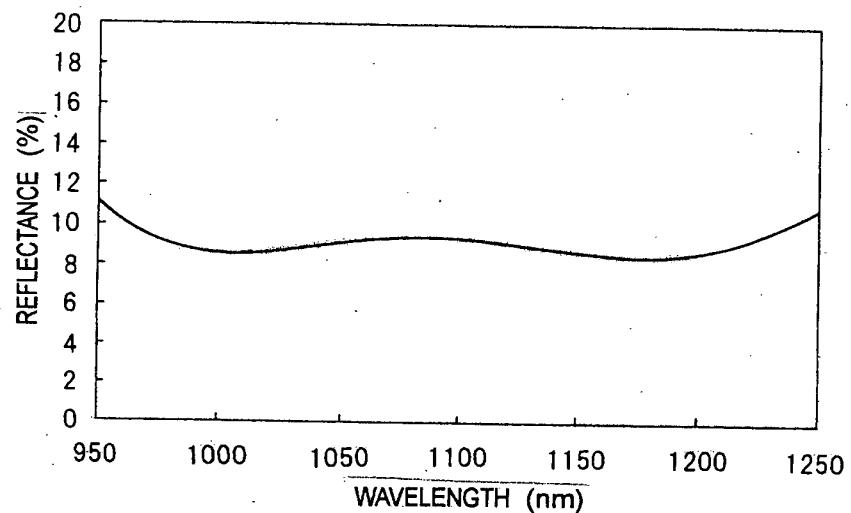
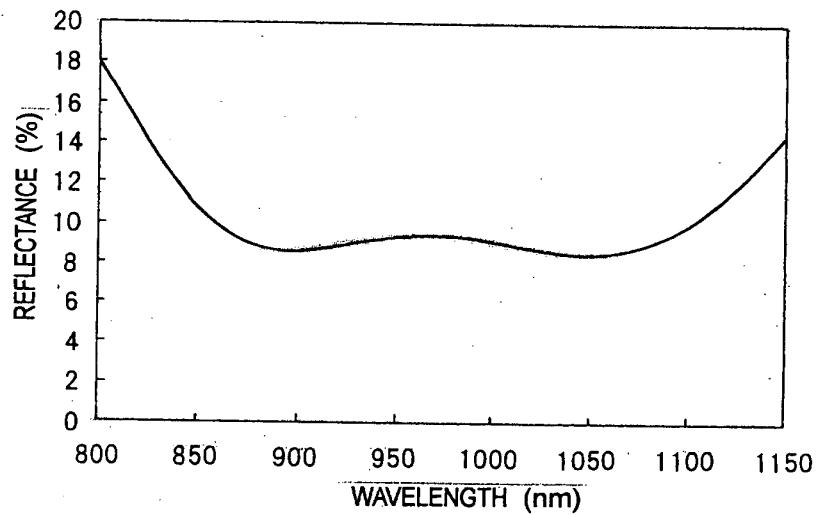


Fig. 74



Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 75

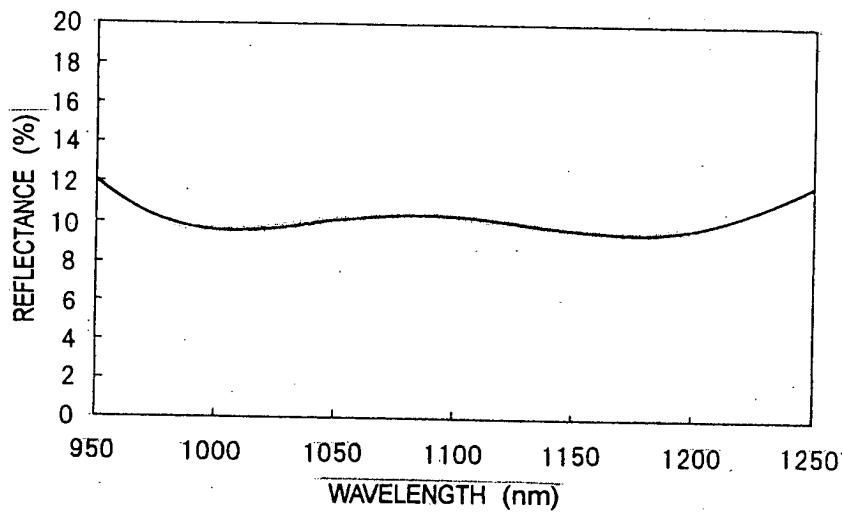
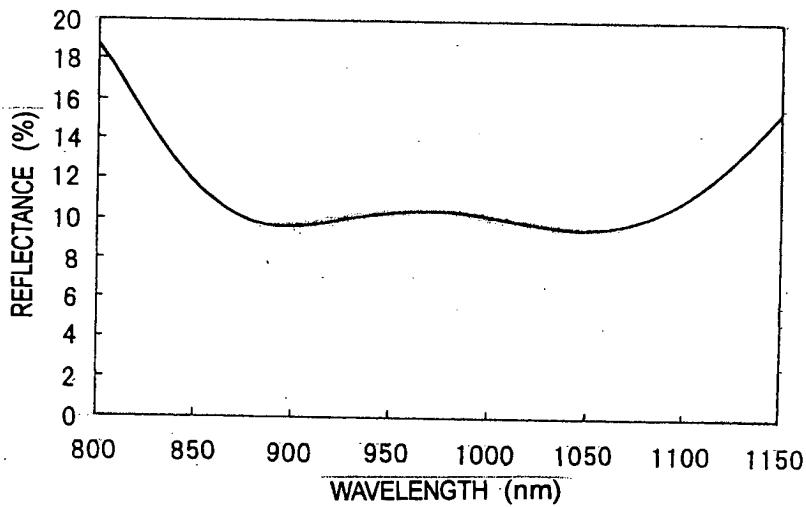


Fig. 76



Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
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Fig. 77

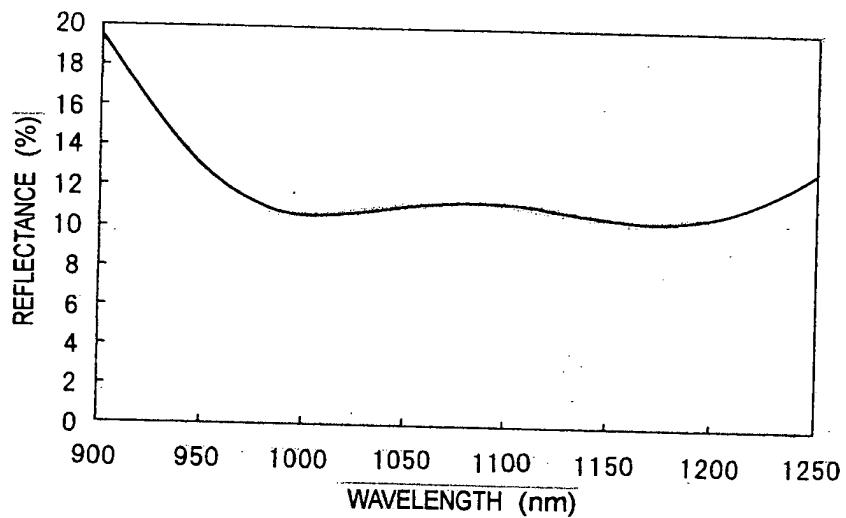
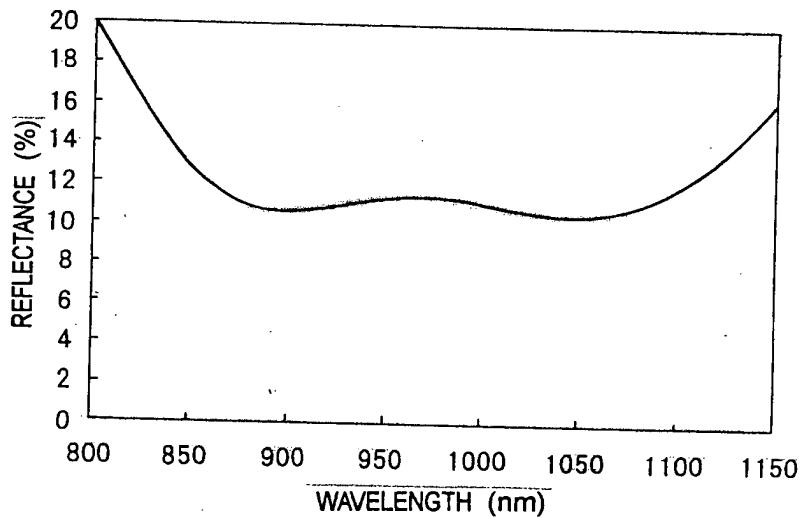


Fig. 78



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Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 79

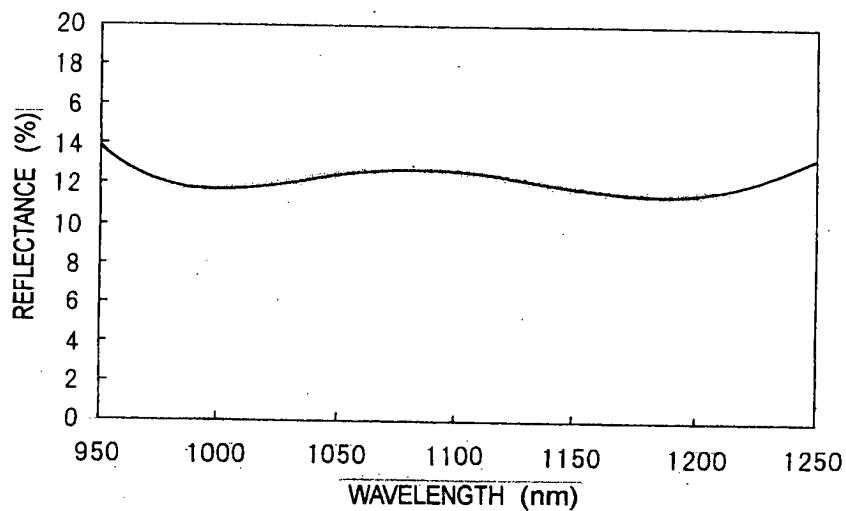
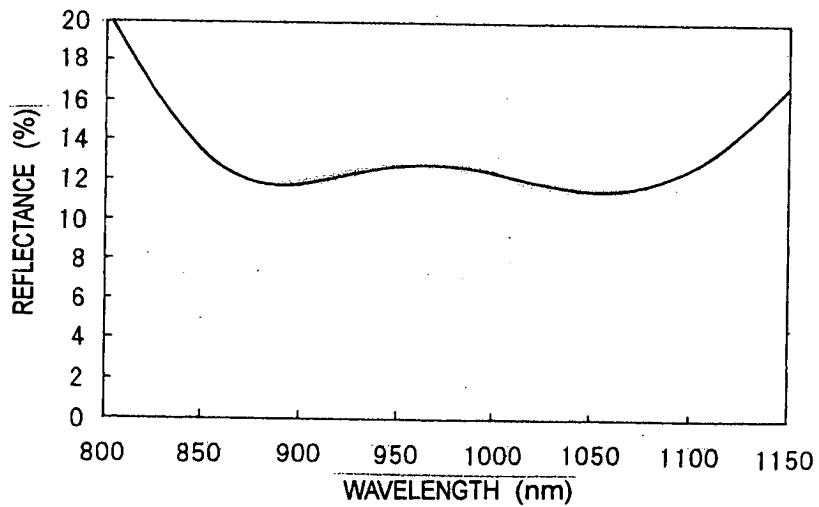


Fig. 80



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Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
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Fig. 81

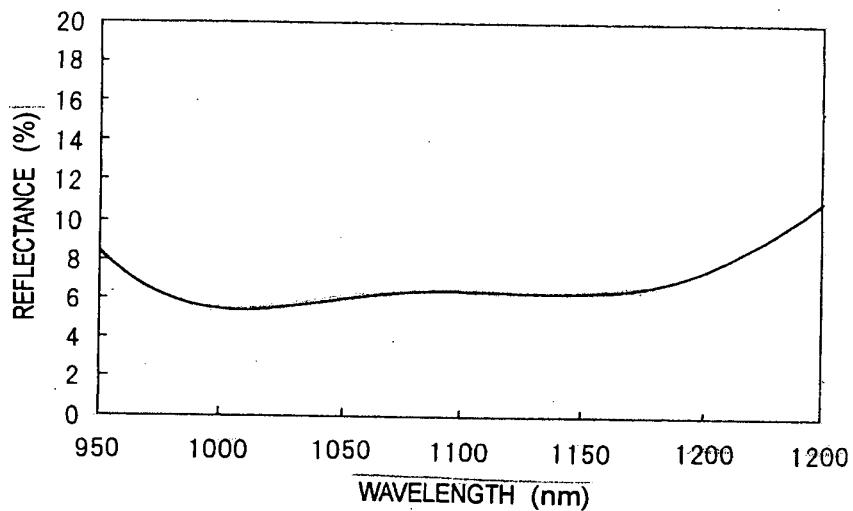
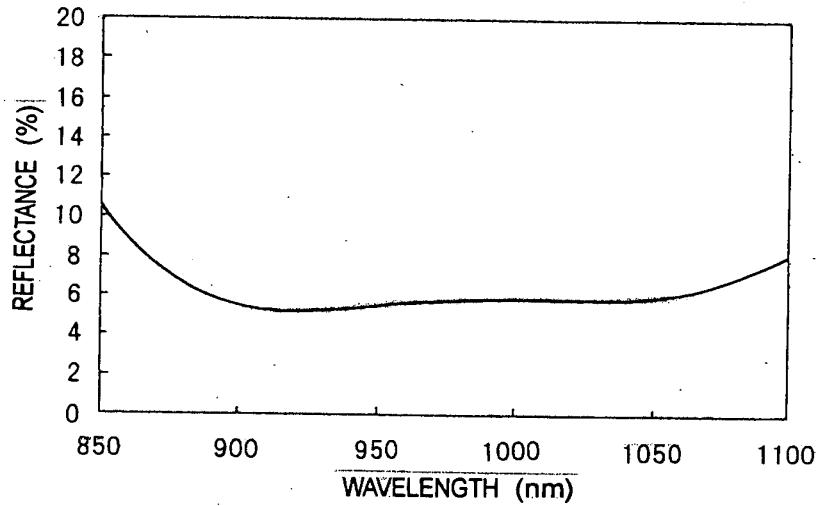


Fig. 82



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Atty Docket No.: 402801
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Fig. 83

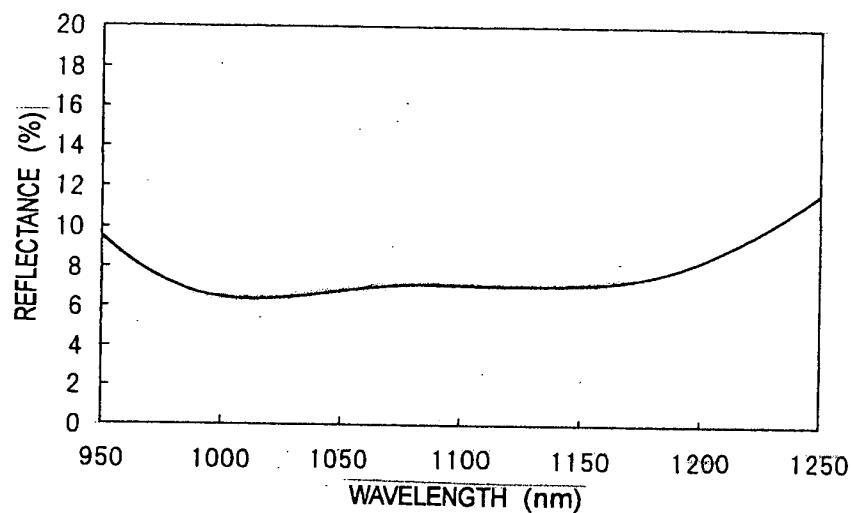
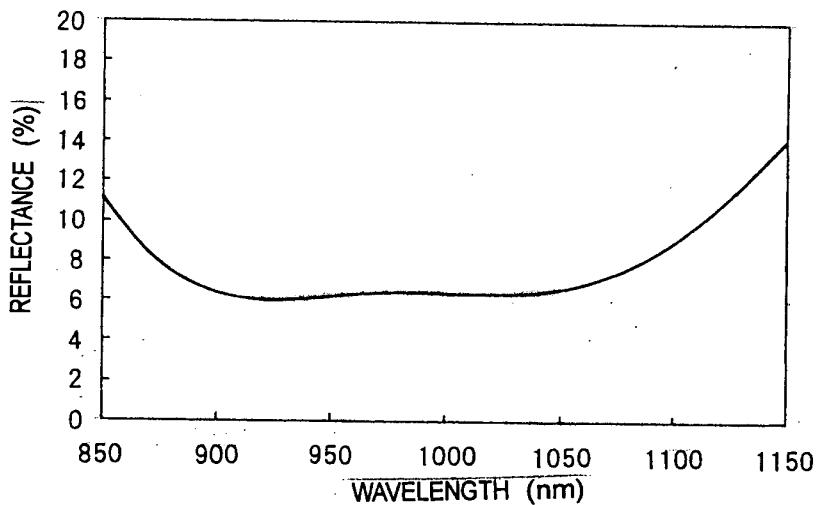


Fig. 84



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Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 85

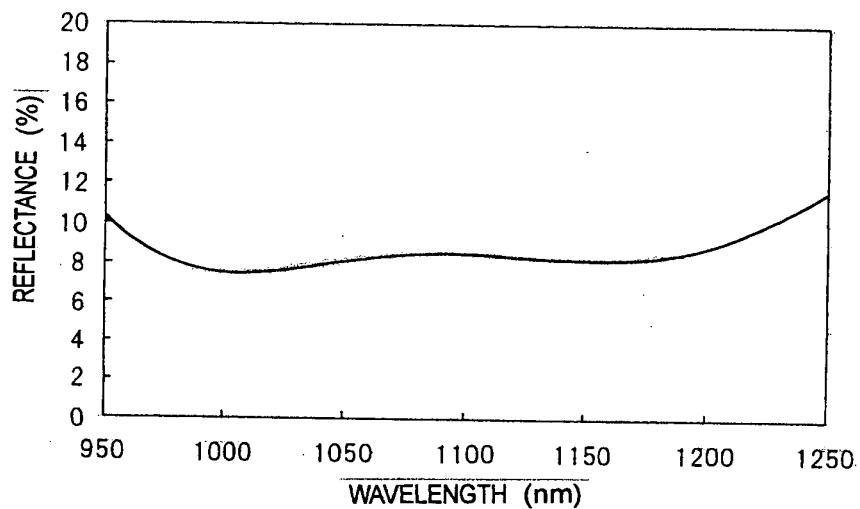
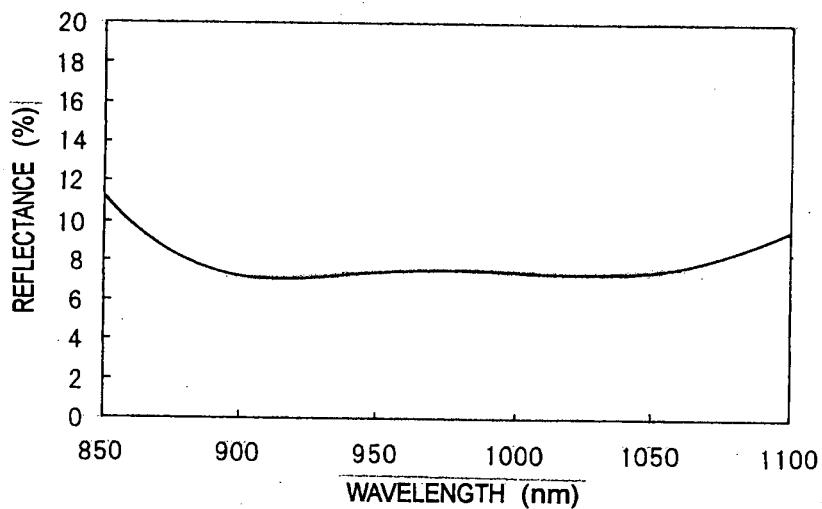


Fig. 86



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Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 87

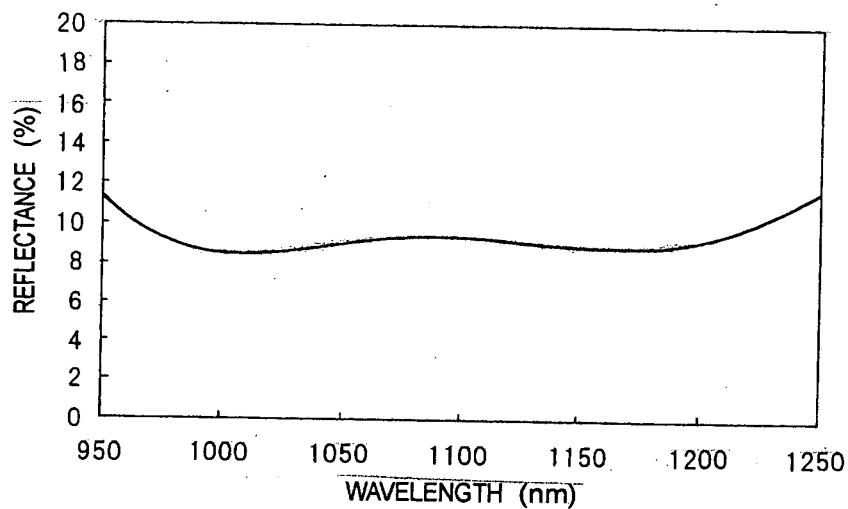
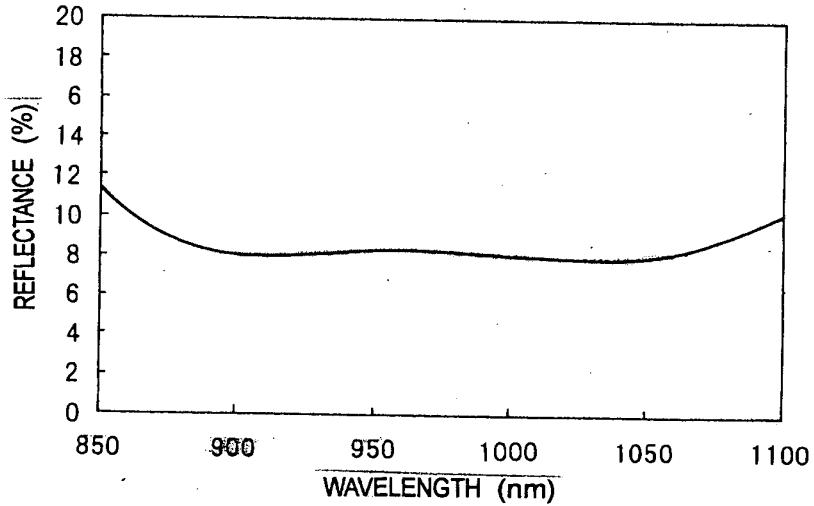


Fig. 88



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Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 89

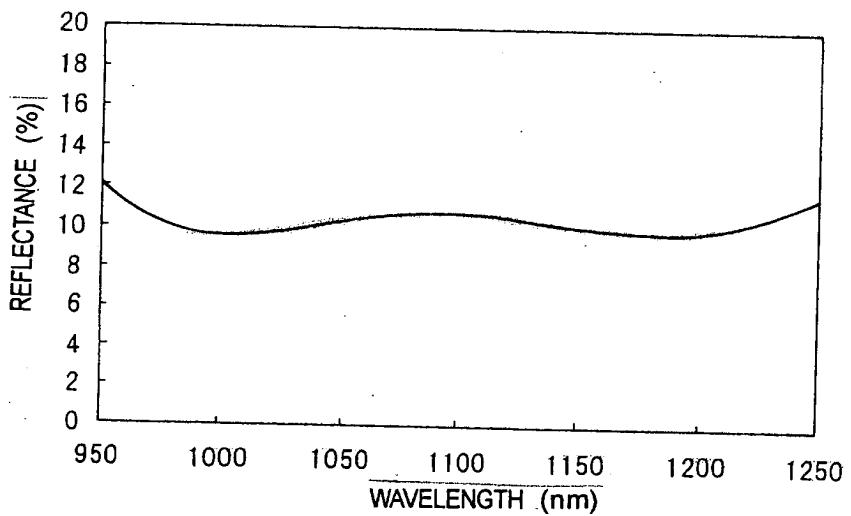
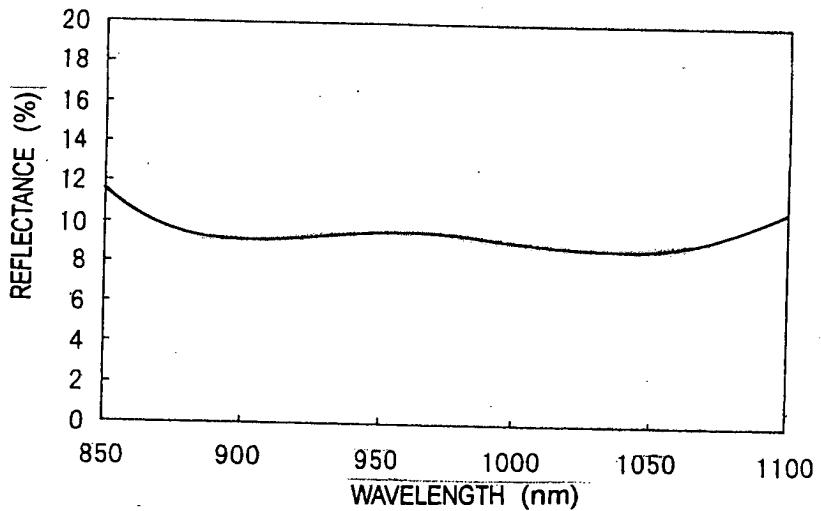


Fig. 90



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Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig.91

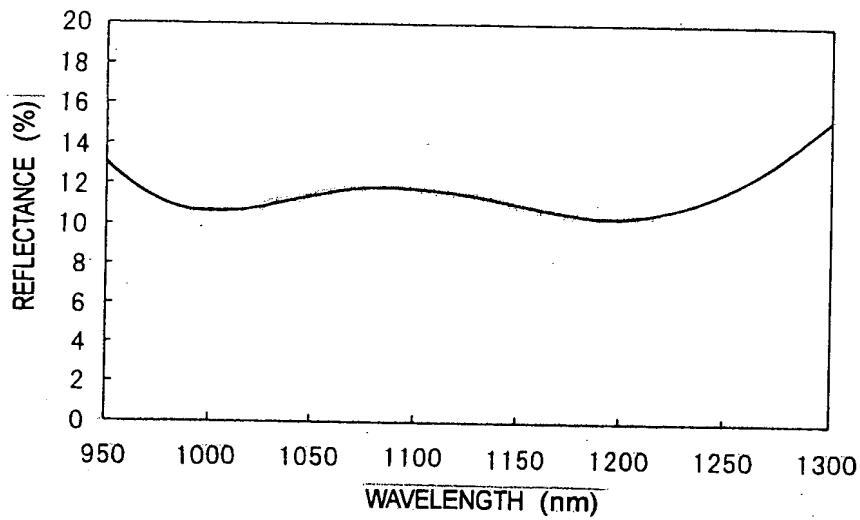
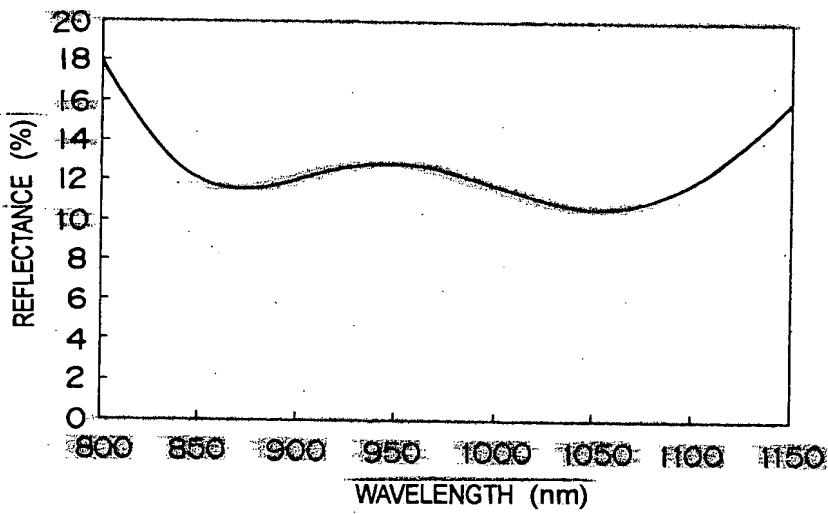


Fig.92



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Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig.93

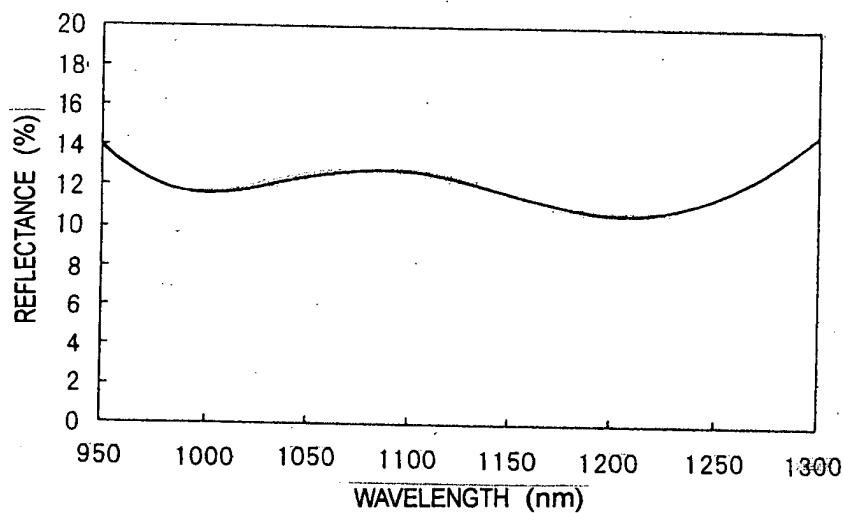
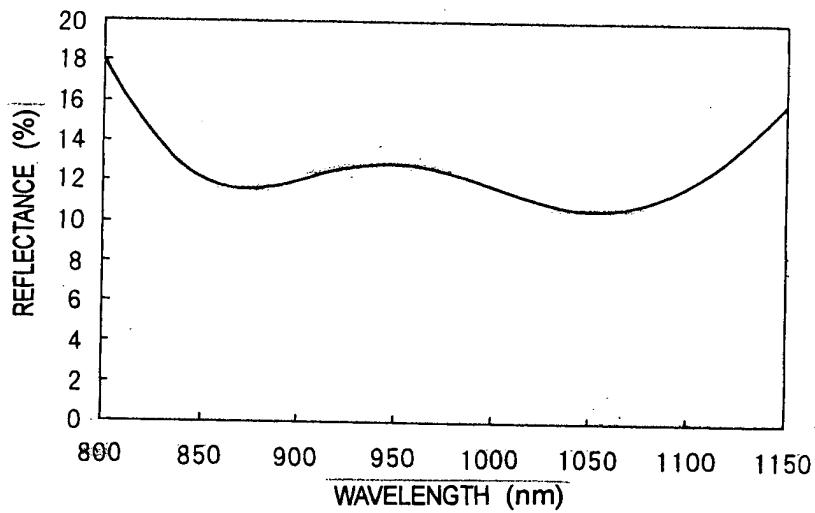


Fig.94



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Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 95

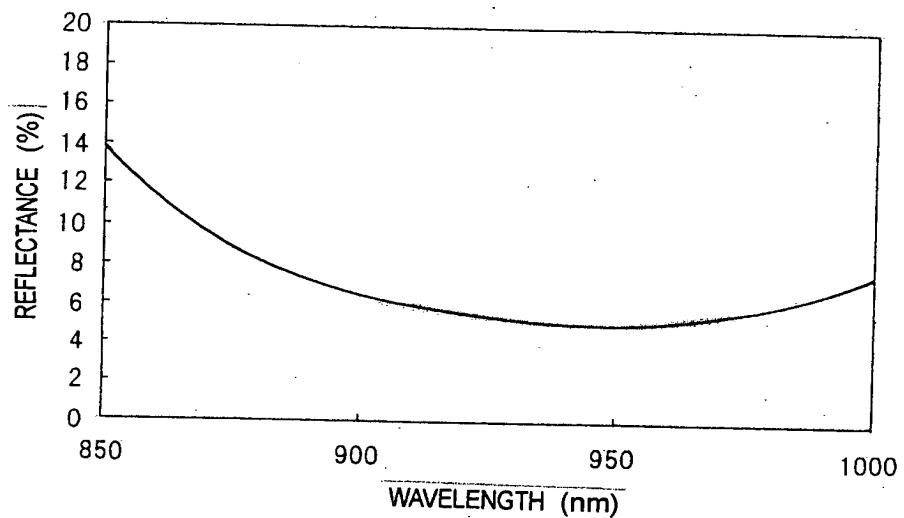
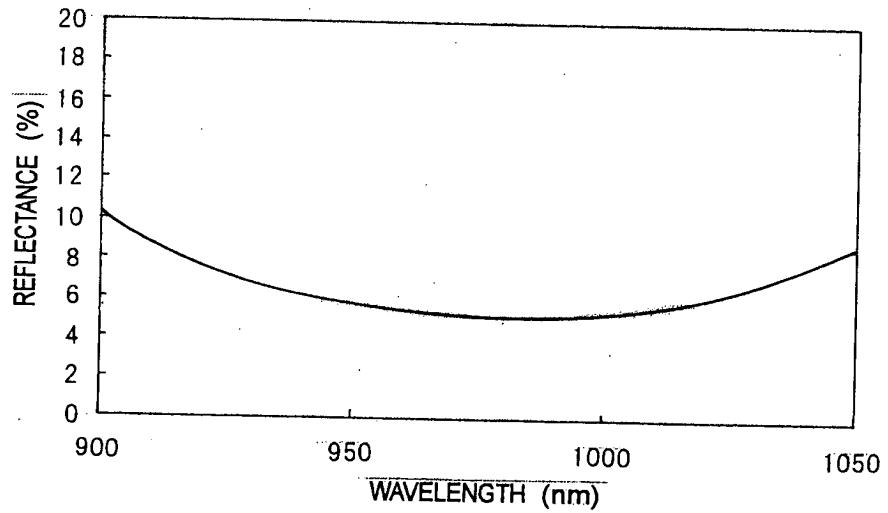


Fig. 96



Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 97

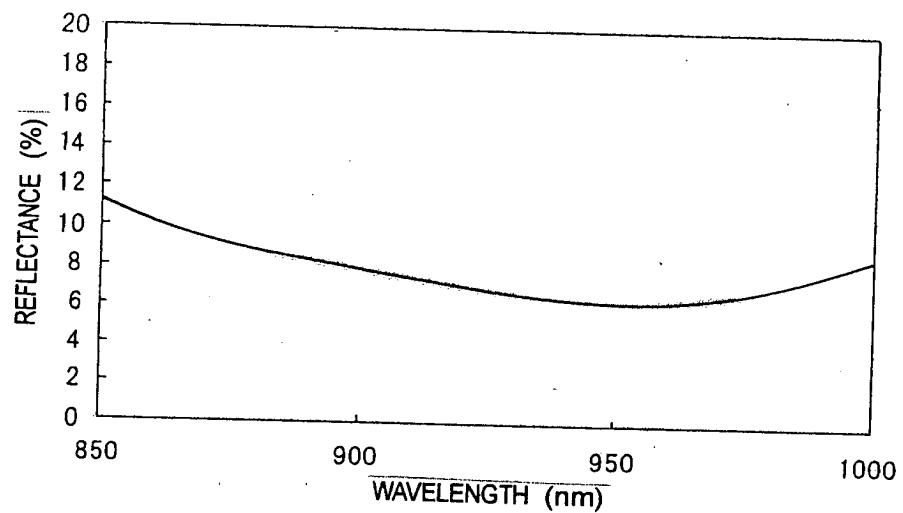
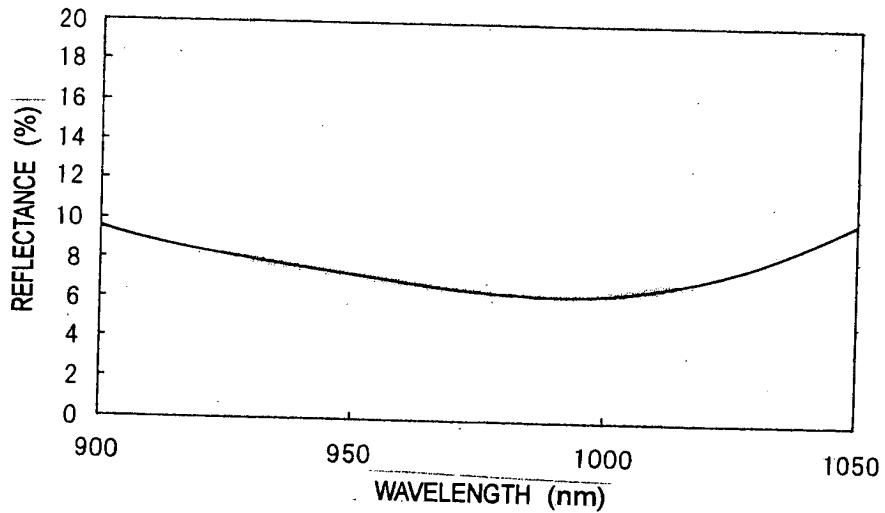


Fig. 98



Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 99

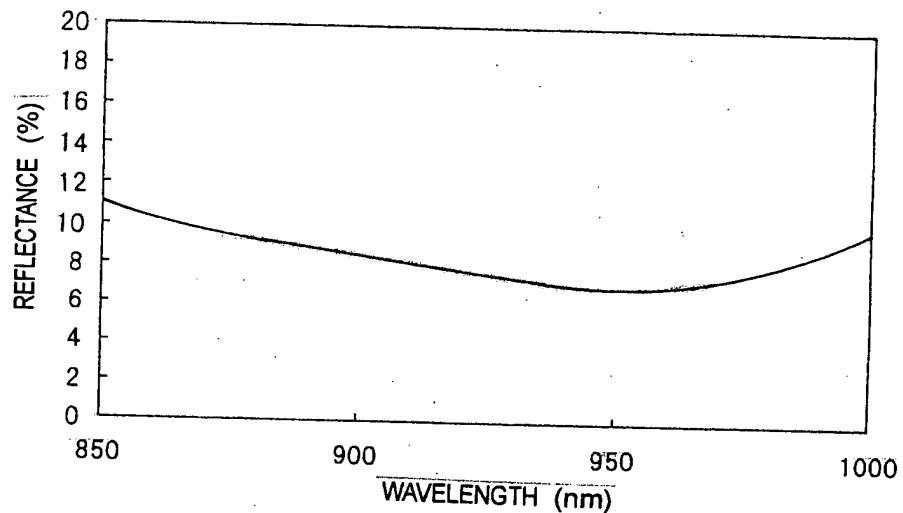
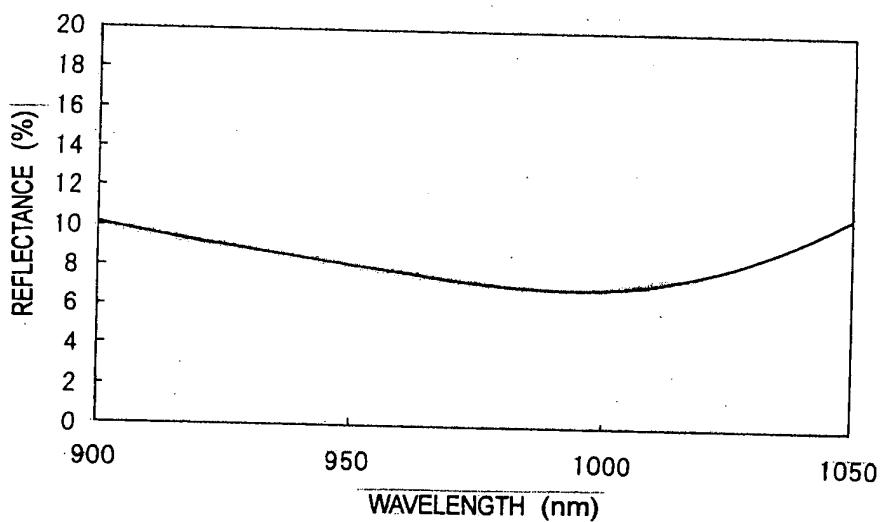


Fig. 100



Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 101

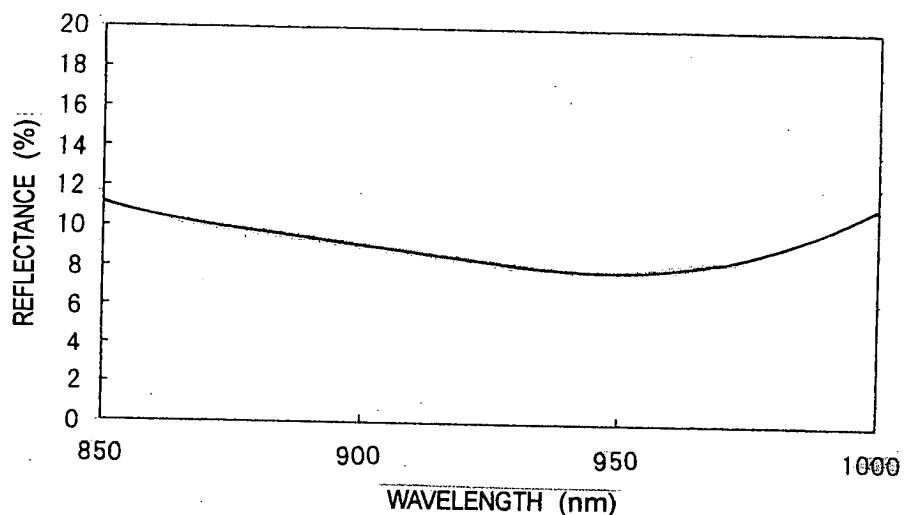
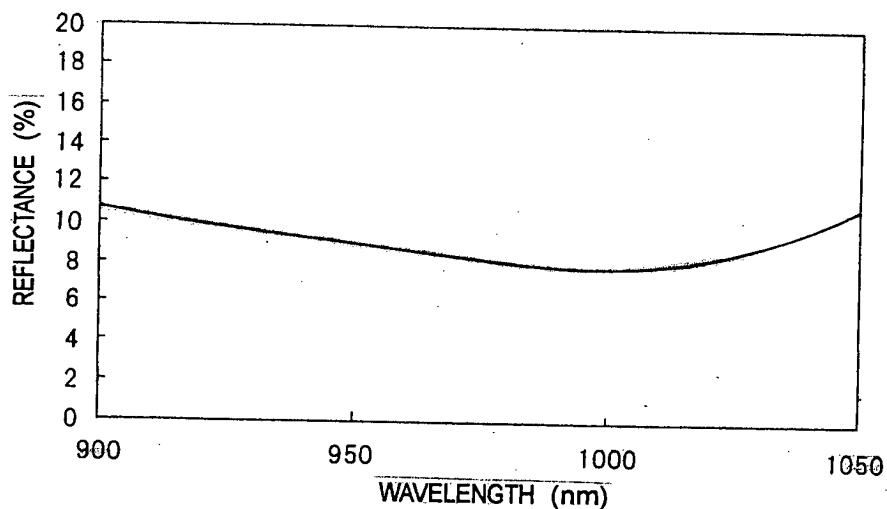


Fig. 102



Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 103

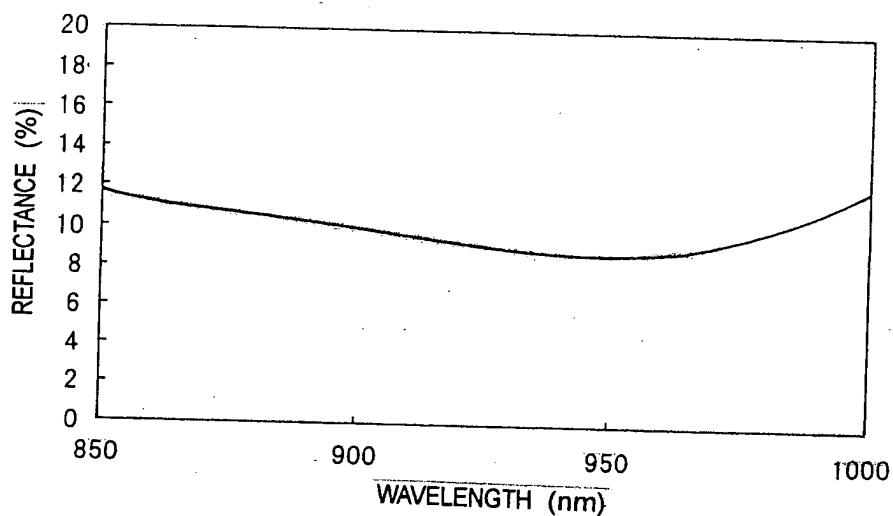
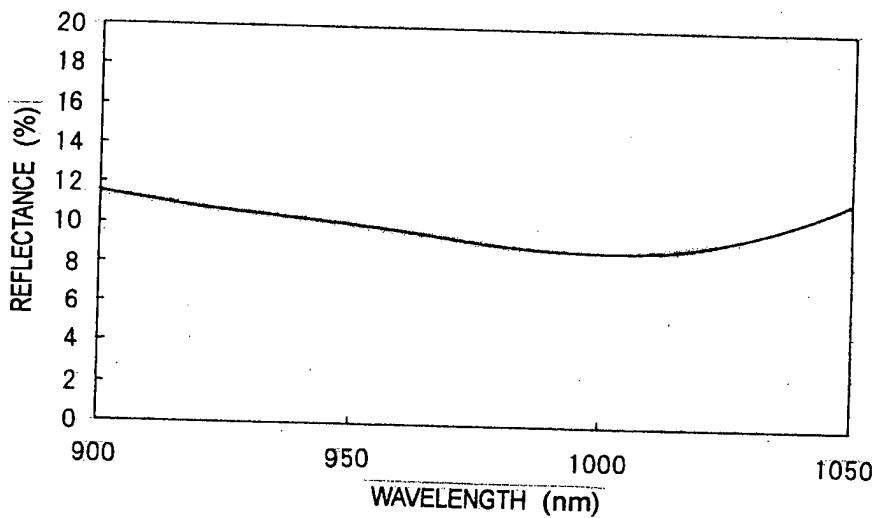


Fig. 104



Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 105

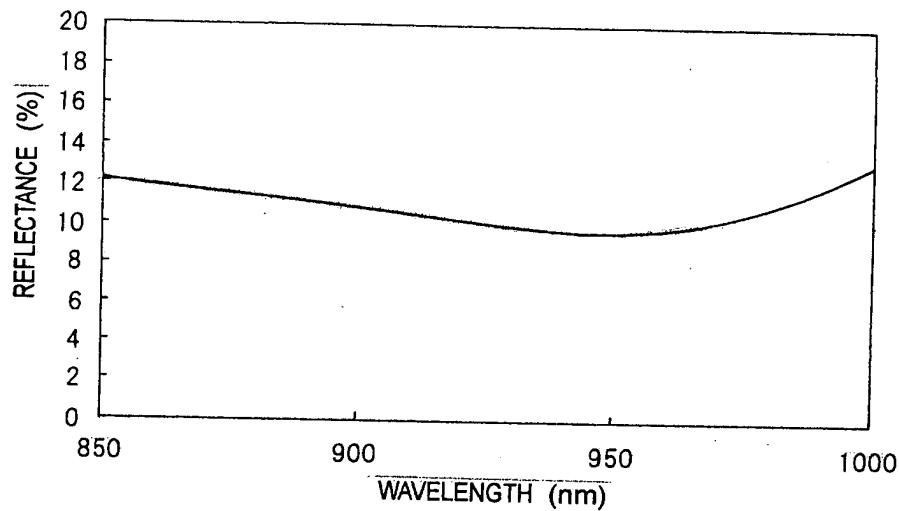
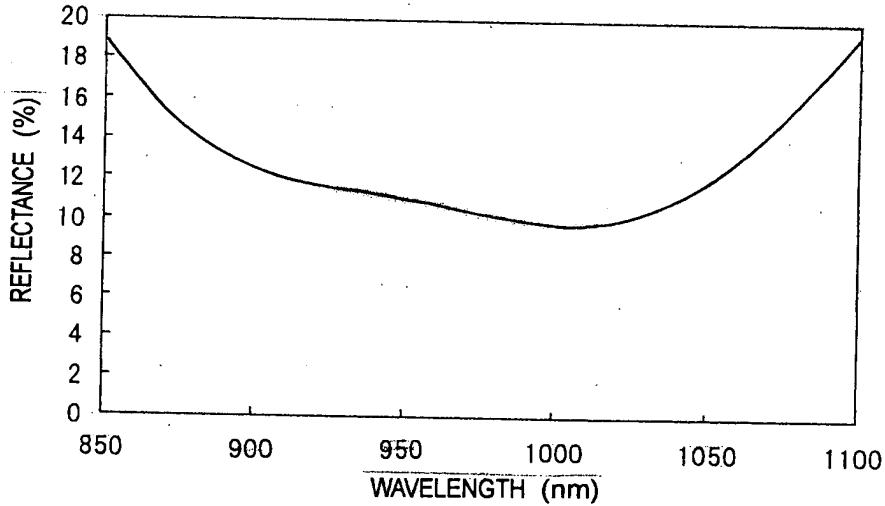


Fig. 106



Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
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Fig. 107

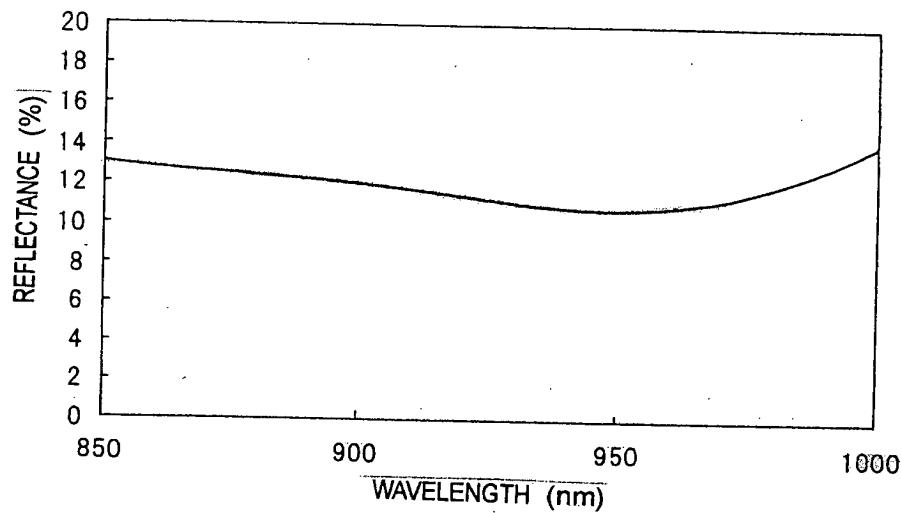
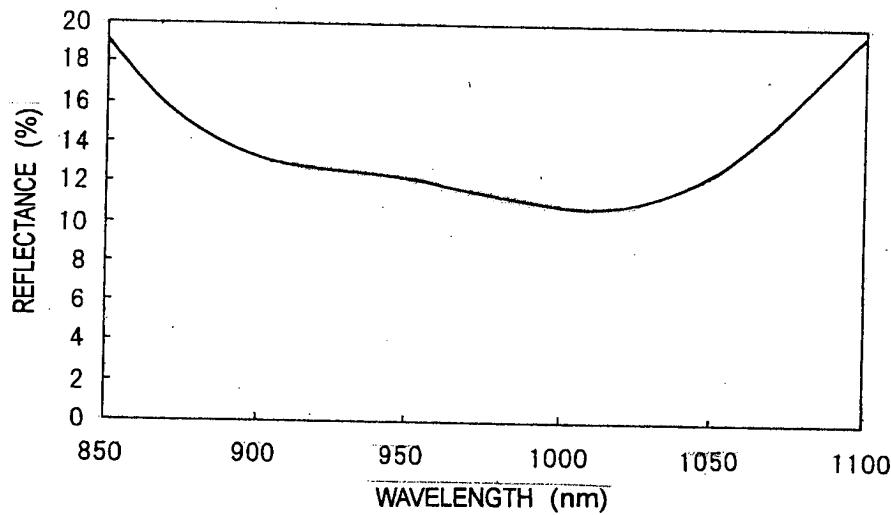
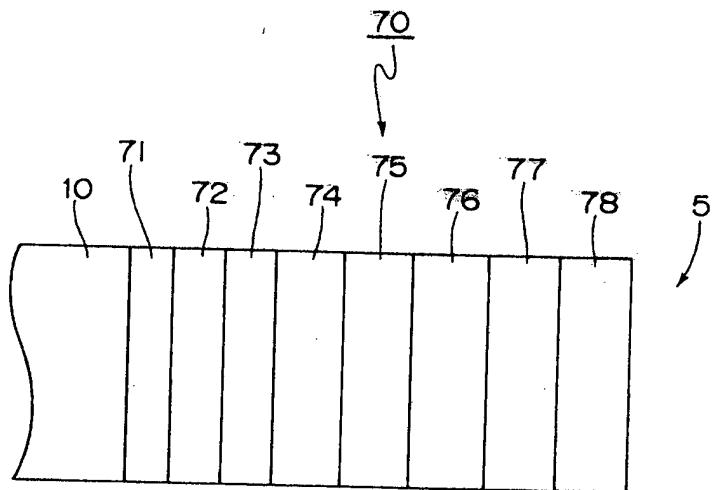


Fig. 108



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Fig. 109



Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
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Fig. 110

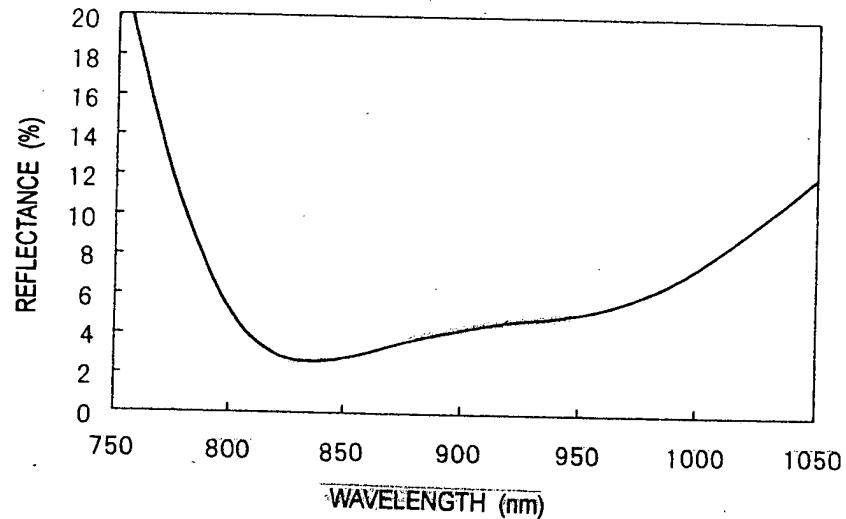
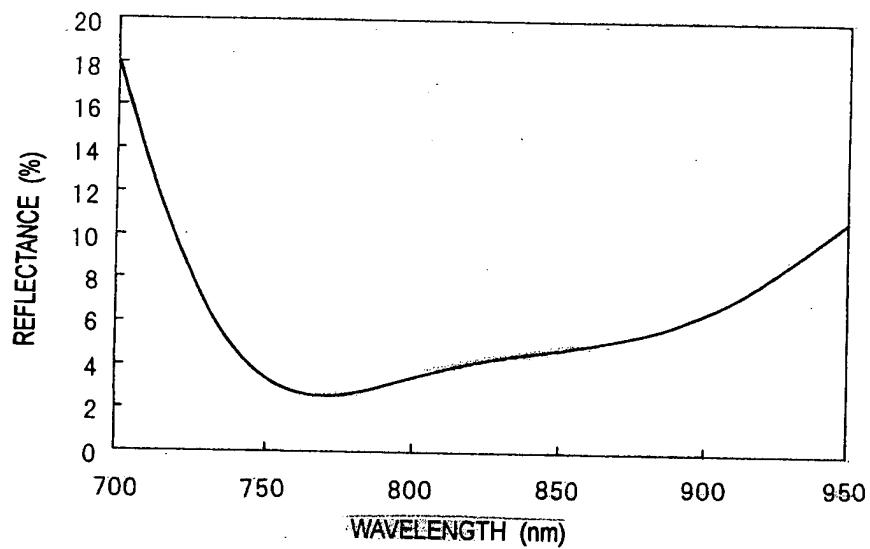


Fig. 111



Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
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Fig. 112

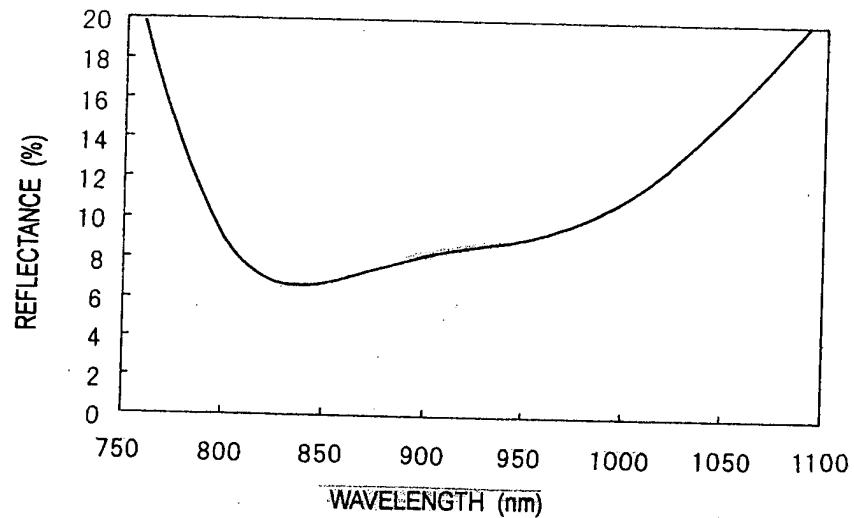
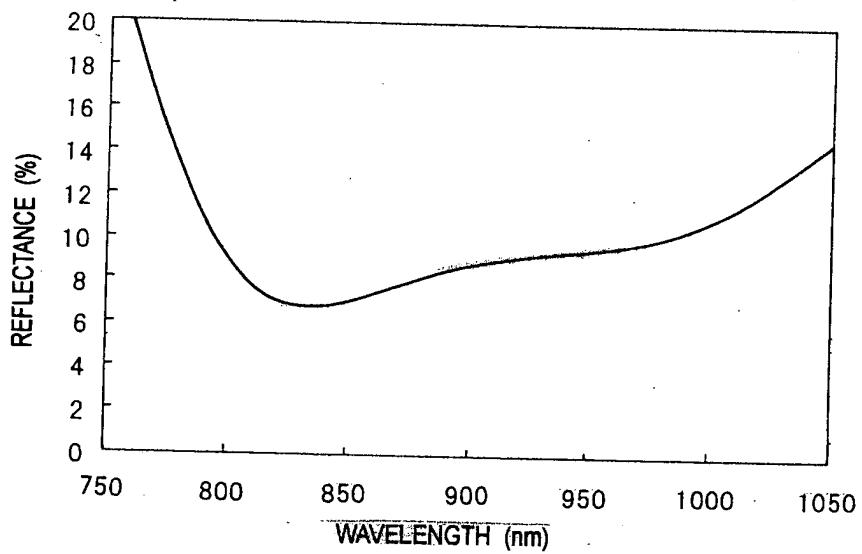


Fig. 113



Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
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Fig. 114

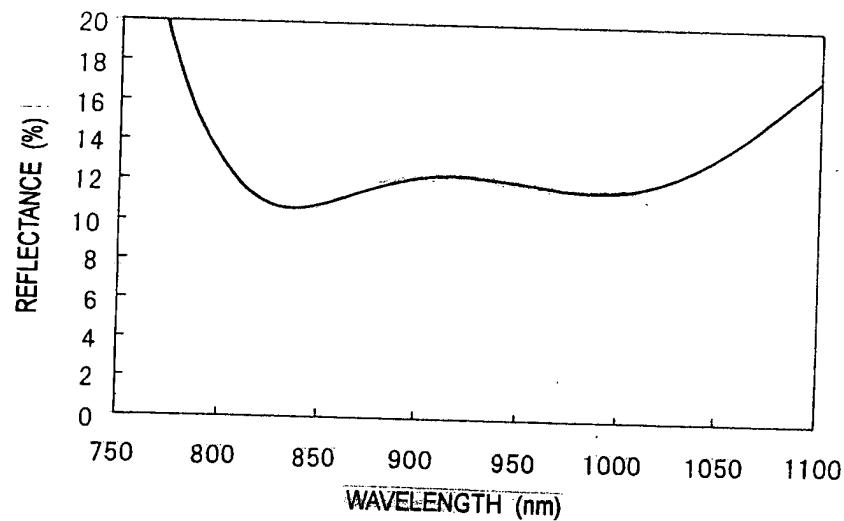
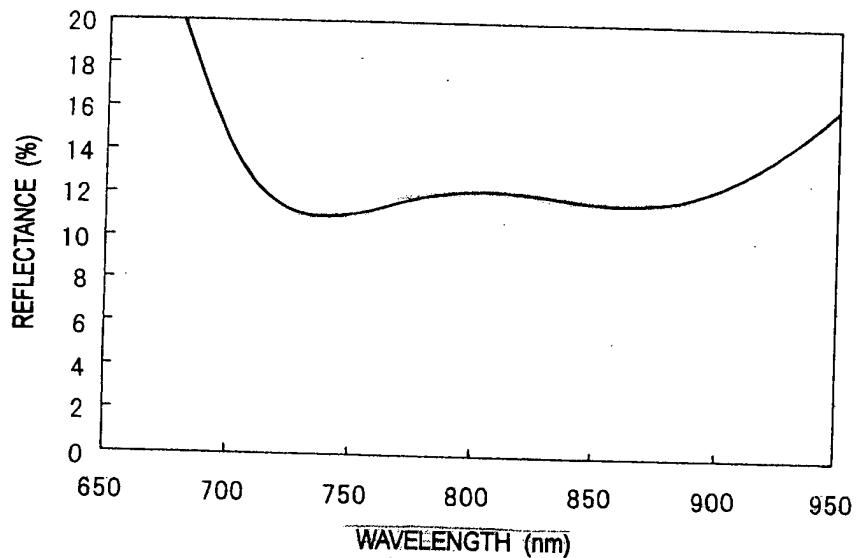
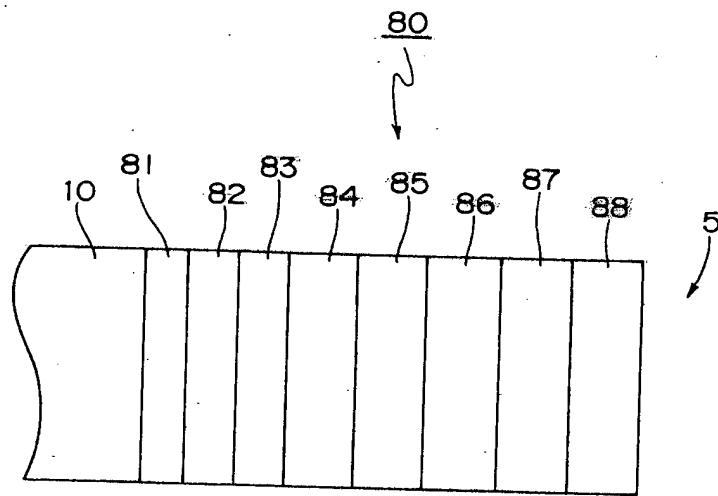


Fig. 115



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Fig. 116



Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 117

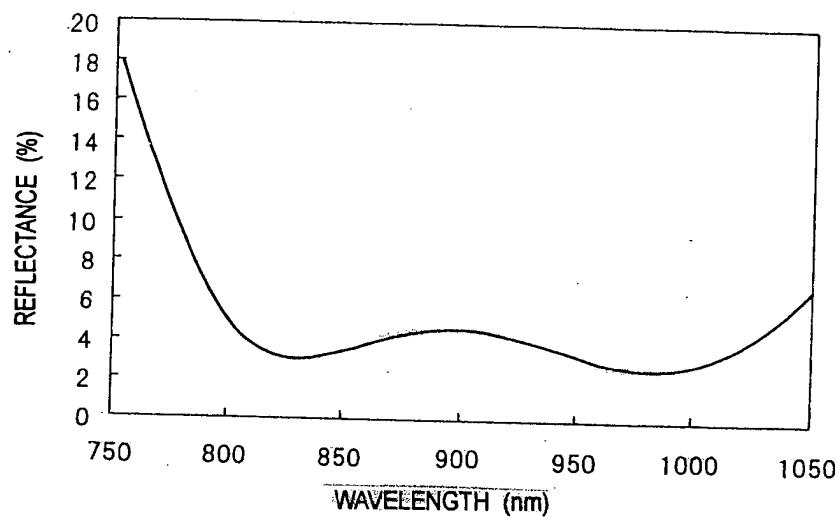
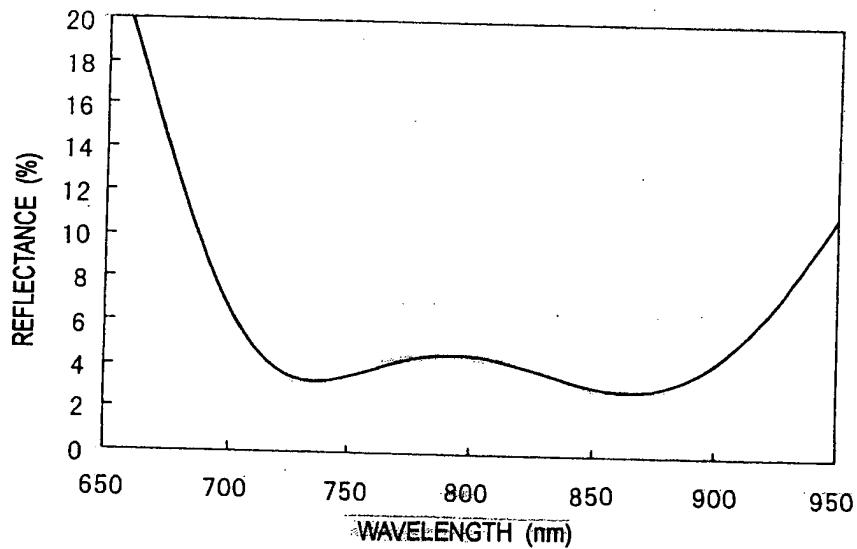


Fig. 118



Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 119

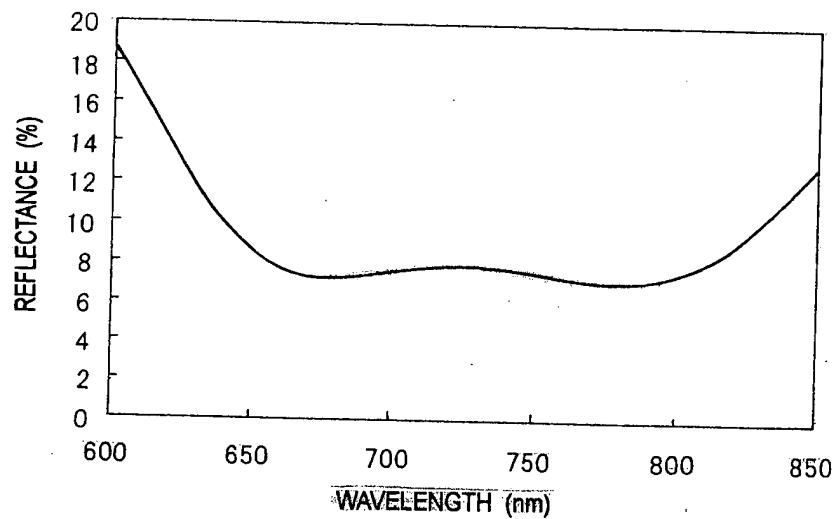
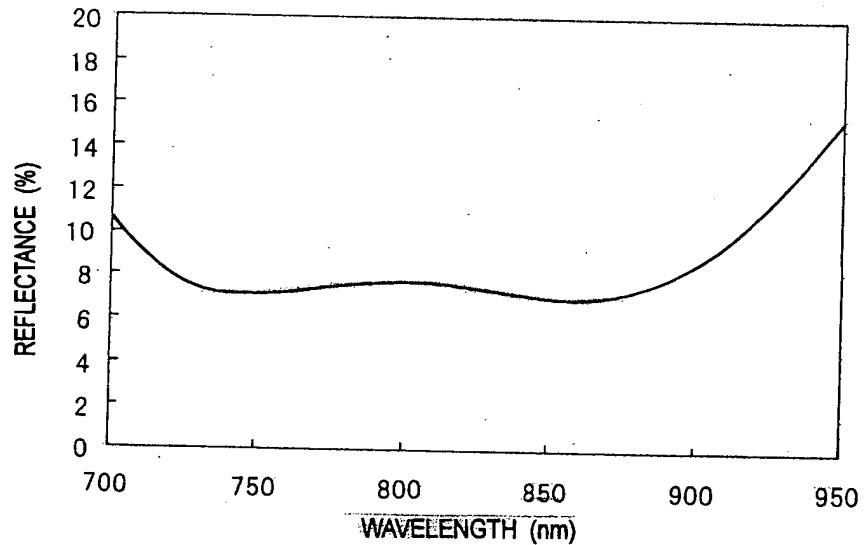


Fig. 120



Title: SEMICONDUCTOR OPTICAL DEVICE
Inventors: SHIGIHARA et al.
Atty Docket No.: 402801
Leydig, Voit & Mayer 202-737-6770

Fig. 121

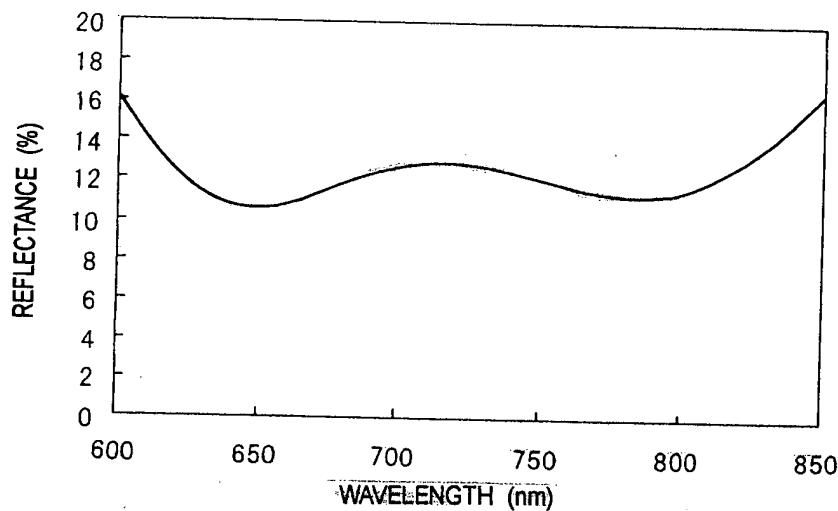


Fig. 122

